NOTICE:

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RECONNAISSANCE LEVEL
CHARACTERIZATION REPORT FOR
GROUP A FACILITIES
REVISION 0
VOLUME 2 OF 2

JUL | 2000 RECEIVED RECORDS CENTER

October 14, 1999

ASSIN TRECTO

IA-A-000531

Appendix E Pad 904 Tent 10

IN FOR MATURUSALY CONTAMINATION SURVEY FORM

				PAGE	PAGE 1 OF 2
LOG NUMBER:		REMOY	REMOVABLE CONTAMINATION SURVEY INSTRUMENT DATA	AMINATION ENT DATA	
FOR: PAWRE PRL					
RWP COTHER RULLING	MFR:	EBER.	EBER.	EBER.	EBER.
BUILDING/LOCATION: FOUR Pad 704 Pad 7 Part 10	MODEL: SERIAL #:	S.A.C 4	S.A.C 4	S.A.C 4	S.A.C 4
DATE: 1-16-48 0800	CAL DATE: 5-16-57	5-16-67	3-12-92	•	
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	MODEL:	B.C. 4	B.C. 4	B.C. 4	B.C. 4
COMMENTS:	CAL DATE:	1-7-98	1-1.98		
oble:	CAL DUE DATE: 7-7-58	3:7-7-58	24-58		
ritur sakar		TOTA	TOTAL CONTAMINATION	MOTTA	
		SURV	SURVEY INSTRUMENT DATA	INT DATA	
	MFR:	N.E. TECH			
	MODEL:	ELECTRA			
PERFORMED BY (PRINT NAME): $Mlusz$	SERIAL #:				
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REVIEWED BY: THISHER	MDA:		,		
RO SUPERVISION PRINT NAME					

MDA = CF X [2.71 + 4.65 \(\sqrt{BACKGROUND (CPM)} \)

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(DPM/100 CM³)

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FORMATION ONLY RADIOLOGICAL CONTAMINATION SURVEY FORM

PAGE 1 OF

LOG NUMBER:	REMOYABLE C SURVEY INST	REMOYABLE CONTAMINATION SURVEY INSTRUMENT DATA	
FOR: P/WRE PRL			
RWP OTHER ROUTING	MFR: EBER. EBER.	R. EBER.	EBER.
	MODEL: S.A.C 4 S.A.C 4 SERIAL#: / D< @ % < @	"	S.A.C 4
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	MFR: EBER. EBER.	R. EBER.	EBER.
	B.C. 4	B.C. 4	B.C. 4
COMMENTS:	CAL DATE: 1-7-58 1-66	28-79-	
	ATE: 2-2-58	8-10-8	
	TOTAL CONTAMINATION	AMINATION	
	SURVEY INSTI MFR: N.E. TECH	SURVEY INSTRUMENT DATA	
	MODEL: ELECTRA		
PERFORMED BY (PRINT NAME): HANKING	SERIAL #:		
RCT SIGNATURE EMP# DATE	CAL DATE:		
	BACKGROUND:		
	SPFICIENCY:		
REVIEWED BY: HIPSher ROSUPERVISION PRINT NAME	MDA:		
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RO SUPERVISION SIGNATURE DATE	$MDA = CFX[2.71 + 4.65 \ \sqrt{BACKGROUND(CPM)}]$	ROUND (CPM)]	

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RADIOLOGICAL CONTAMINATION SURVEY FORM

SURVEY RESULTS (DPM/100 CM²)

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RADIOLOGICAL CONTAMINATION SURVEY FORM

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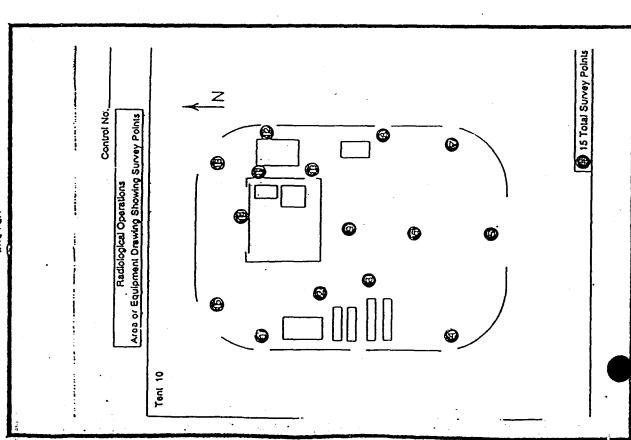
AADIOLOGICAL CONTAMINATION SURVEY FORM SURVEY RESULTS (DPM/100 CM*)

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PAGE 1 OF

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RWP OTHER ROUFINE	MFR:	EBER.	EBER.	EBER.	EBER.
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		SURVE	SURVEY INSTRUMENT DATA	NT DATA	
	MFR:	N.E. TECH			
	MODEL:	ELECTRA			
PERFORMED BY (PRINT NAME): / HANKINS	SERIAL #:				
Harbuin 11-2858	CAL DATE:				
RCT SIGNATURE DATE	CAL DUE DATE:				
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MDA = CF X [2.71 + 4.65 $\sqrt{BACKGROUND}$ (CPM)]

RO SUPERVISION SIGNATURE

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RADIOLOGICAL CONTAMINATION SURVEY FORM SURVEY FORM

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RADIOLOGICAL CONTAMINATION SURVEY FORM

PAGE 1 OF

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AADIOLOGICAL CONTAMINATION SURVEY FORM SURVEY RESULTS (0PM/100 CM*)

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FORMATION SURVEY FORM

PAGE 1 OF

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LOG NUMBER:	•	REMOY	REMOVABLE CONTAMINATION SURVEY INSTRUMENT DATA	MINATION ENT DATA	•
FOR: P/WRE PRL					
RWP COTHER ROSHIN	MFR:	EBER.	EBER.	EBER.	EBER.
BUILDINGLOCATION: ROOM: Tent 10	MODEL: SERIAL #:	S.A.C 4	S.A.C4 959	S.A.C 4	S.A.C 4
DATE: 2-12-58 TIME: 0830	CAL DATE: 5-16-97 CAL DUE DATE: 3-16-98	5-16-97 E: 3-16-98	5-12-51		
ITEM DESCRIPTION: NeeKly Control Point	ğ	EBER.	EBER.	EBER.	EBER.
Survey !	MODEL:	B.C. 4	B.C. 4	B.C. 4	B.C. 4
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	MFR:	N.E. TECH			
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PERFORMED BY (PRINT NAME): MALLAZ	SERIAL #:				
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MDA = CF X [2.71 + 4.65 $\sqrt{BACKGROUND (CPM)}$]

RO SUPERVISION SIGNATURE



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PAGE 2

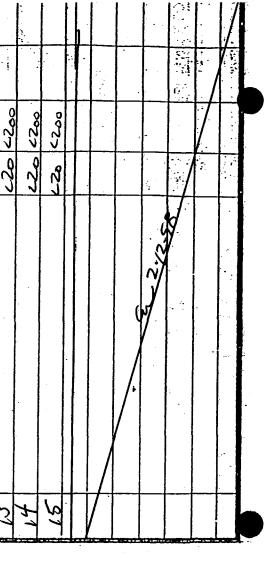
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RADIOLOGICAL CONTAMINATION SURVEY FORM

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RADIOLOGICAL CONTAMINATION SURVEY FORM

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MDA = CF X [2.71 + 4.65 $\sqrt{BACKGROUND (CPM)}$

RO SUPERVISION SIGNATURE



FORMI SURVEY RESULTS (DPM/100 CM²)

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PAGE 2

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RADIOLOGICAL CONTAMINATION SURVEY FORM

PAGE 1 OF

LOG NUMBER:	•	SURVI	SURVEY INSTRUMENT DATA	MINATION ENT DATA	•
FOR: P/WRB PRL					
RWP VOTHER ROLLING	MFR:	EBER.	EBER.	EBER.	EBER.
BUILDINGLOCATION: ROOM: \$04 PAd +	MODEL: SERIAL #:	S.A.C4	S.A.C 4	S.A.C 4	S.A.C 4
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	MFR:	EBER.	EBER.	EBER.	EBER.
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	MFR:	N.E. TECH			
	MODEL:	ELECTRA			
PERFORMED BY (PRINT NAME): / / A whins	SERIAL #:				
RCT SIGNATURE DATE	CAL DATE:	TE:			
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A SUPERVISION PRINT NAME					

MDA = CF X [2.71 + 4.65 \(\sum \) BACKGROUND (CPM)]

RO SUPERVISION SIGNATURE

RADIOLOGICAL CONTAMINATION SURVEY FORM SURVEY RESULTS (DPM/100 CM²)

PAGE 2 OF 2 LOG NUMBER:

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PAGE 1 OF

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RWP OTHER ROLLINE	MFR: BBER.	EBER.	EBER.	EBER.
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	MODEL: B.C. 4	B.C. 4	B.C. 4	B.C. 4
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COMMENTS:	CAL DATE: 1-7-88			
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		SURVEY INSTRUMENT DATA	T DATA	
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	MODEL: ELECTRA			
PERFORMED BY (PRINT NAME): / HANK, ~ S	SERIAL #:			
RCT SIGNATURE DATE	CAL DATE: CAL DUE DATE:			
	BACKGROUND:			
	SFFICIENCY:			
REVIEWED BY: K GARLAND	MDA;			
RO SUPERVISION PRINT NAME				

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RO SUPERVISION SIGNATURE

MDA = CF X (2.71 + 4.65 $\sqrt{BACKGROUND (CPM)}$)

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AADIOLOGICAL CONTAMINATION SURVEY FORM SURVEY RESULTS (0PM/100 CM*)

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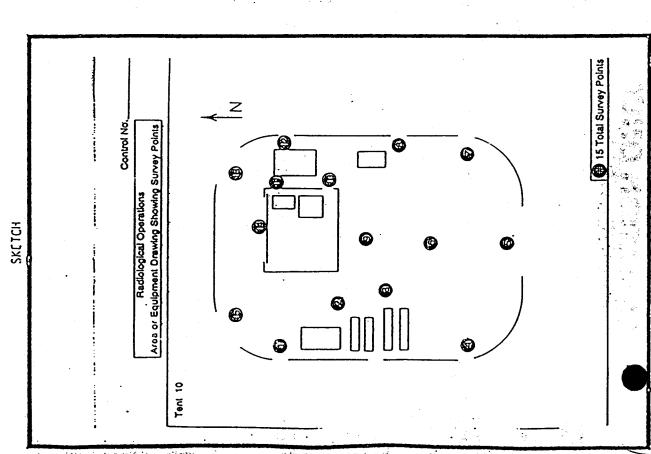


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PAGE 1 OF

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PAGE 1 OF

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PAGE 1 OF

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	SURVE	SURVEY INSTRUMENT DATA	
	MFR: N.E. TECH		
	MODEL: ELECTRA		
PERFORMED BY (PRINT NAME): HANKINS (SERIAL #:		
	CAL DATE:		
KCI SIGNATURE EMP# DATE	CAL DUE DATE:		
	BACKGROUND:		-
	SFFICIENCY:		
REVIEWED BY: K. G 44/AND	MDA:		
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RADIOLOGICAL CONTAMINATION SURVEY FORM SURVEY RESULTS (0PM/100 CM')

PAGE 2 OF 2

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RADIOLOGICAL CONTAMINATION SURVEY FORM

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	MFR: N.E. TECH			
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INFORMATION ONLY RADIOLOGICAL CONTAMINATION SURVEY FORM

PAGE 1 OF

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BUILDINGLOCATION: ROOM: FOLF Ld	MODEL: SERIAL #:	S.A.C4	8.A.C4	S.A.C 4	S.A.C 4
DATE: 4-28-98	CAL DUE DATE: $3-13-56$	3-13-50	3-24-98		
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ADIOLOGICAL CONTAMINATION SURVEY FORM SURVEY RESULTS (DPM/100 CM*)

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AADIOLOGICAL CONTAMINATION SURVEY FORM SURVEY RESULTS (DPM/100 CM*)

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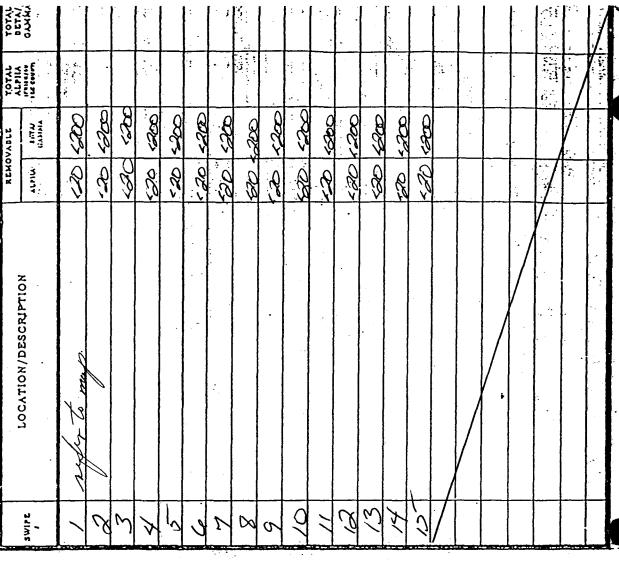
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RADIOLOGICAL CONTAMINATION SURVEY FORM

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PAGE 1 OF

LOG NUMBER:		REMOY	REMOVABLE CONTAMINATION SURVEY INSTRUMENT DATA	MINATION INT DATA	•
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INFORMATION SORVEY FORM

PAGE 1 OF

REMOVABLE CONTAMINATION SURVEY INSTRUMENT DATA		EBER. EBER. EBER.	EL: S.A.C4 S.A.C4 S.A.C4 S.A.C4	3. 13-96 3		EBER.	B.C. 4	CAL DATE: 1-7-58 1-6-98	, , ,	TOTAL LEASE LATICOL TATION	SURVEY INSTRUMENT DATA	N.E. T.	ELECTRA	\L #;	CAL DATE:	BACKGROUND:	SFFICIENCY:	
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PAGE 2

ADIOLOGICAL CONTAMINATION SURVEY FORM SURVEY RESULTS (DPM/100 CM1)

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PAGE 1 OF

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ADIOLOGICAL CONTAMINATION SURVEY FORM SURVEY RESULTS (0PM/100 CM*)

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PAGE 1 OF

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PAGE 2

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RADIOLOGICAL CONTAMINATION SURVEY FORM DRAWING LOG / SURVEY NUMBER PAGE 2

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SURVEY RESULTS (DPM/100 CM SQ)

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RADIOLOGICAL CONTAMINATION SURVEY FORM

PAGE 1 OF

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ADIOLOGICAL CONTAMINATION SURVEY FORM SURVEY RESULTS (OPM/100 CM')

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RADIOLOGICAL CONTAMINATION SURVEY FORM

PAGE 1 OF

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ADIOLOGICAL CONTAMINATION SURVEY FORM SURVEY RESULTS (DPM/100 CM*)

PAGE 2

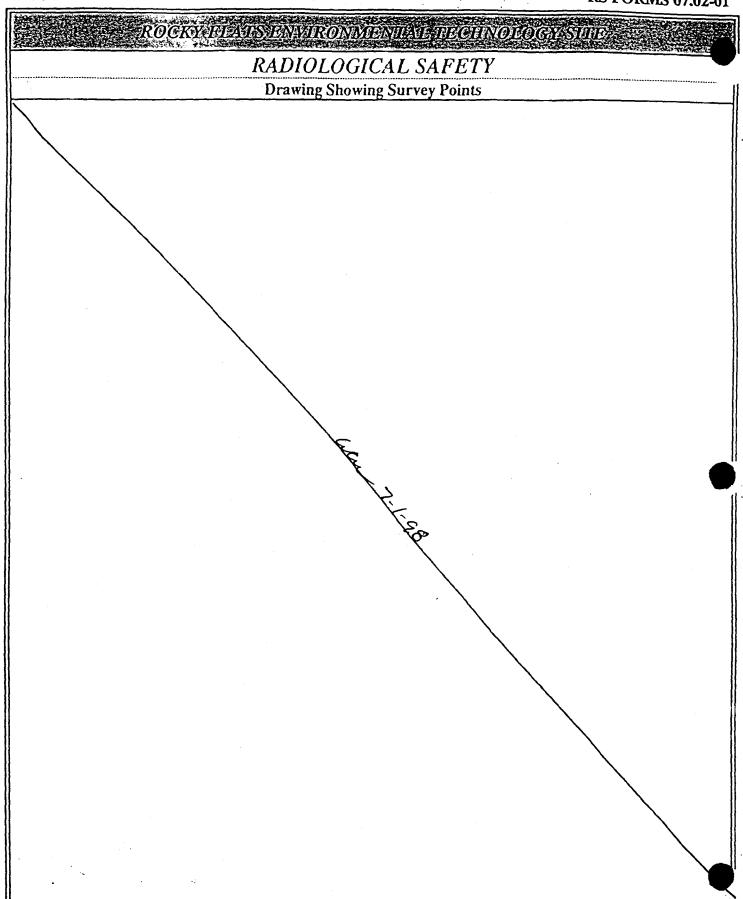
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PAGE 6

ADIOLOGICAL CONTAMINATION SURVEY FORM SURVEY RESULTS (OPM/100 CM')

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RADIOLOGICAL CONTAMINATION SURVEY FORM

PAGE 1 OF

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RWP OTHER	MFR:	EBER.	EBER.	EBER.	EBER.
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MDA = CF X [2.71 + 4.65 $\sqrt{BACKGROUND (CPM)}$]

RO SUPERVISION SIGNATURE

ROCKY FLA	TS ENVIRONME	NTAL TECHNOLOGY SITE
INSTRUMENT DA	LTA	
Mfg. Elective Mfg. Ebeline Model SAC-4 Model SAC-4 Serial # 795 Serial # 824 Cal Due 9-13-98 Cal Due 9-13-9 Bkg. 0. Bkg. 0. Efficiency 33% Efficiency \$3% MDA 20 dm MDA 20 d Mfg. Ebeliul Mfg. Ebeline Model Bc-4 Model Bc-4 Serial # Bc 704 Serial # Bc 702 Cal Due 12-4-98 Cal Due 12-15-9 Bkg. 36 Efficiency 25% Efficiency 25% Efficiency 25%	Mfg. Model Serial # Cal Due Bkg. Efficiency MDA Mfg. Model Serial # Cal Due Bkg. Efficiency MDA Mfg. Model Serial # Cal Due Bkg. Cal Due Bkg. Cal Due Bkg. Cal Due Bkg.	Survey Type: Contamination Survey Building: 904 Pad Location: TENT (O Purpose: Weekly Control Point Survey RWP#: Date: 7-8-98 Time: 0600 RCT: William > Signature RCT: HANKINS / Hankins Print name Signature Emp. #
MDA 200 den MDA 200 den an 7-8-98 PRL#: Comments: Lreekly Surveys is Tend 8, Tent 9, tent 10, Tent 1	relode Source L	Tent 7 ocker First, looker ham Break Room, 904 Pad RESULTS weekly survey results

INFORMATION ONLY

Date Reviewed: 793 98 RS Supervision: KSuper Print Name Signature Emp. #

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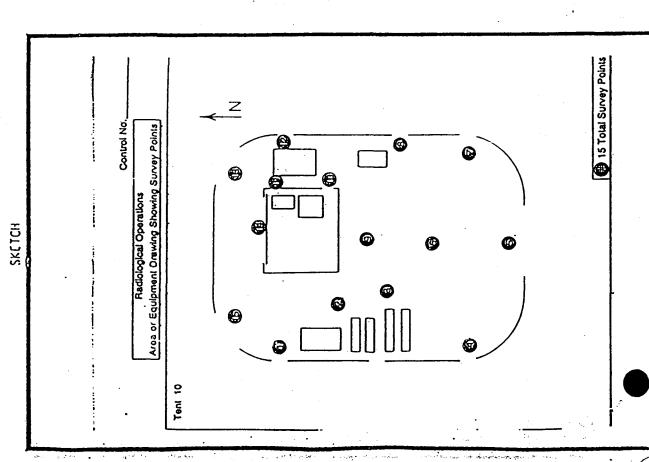
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RADIOLOGICAL CONTAMINATION SURVEY FORM SURVEY RESULTS (DPM/100 CM*)

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RADIOLOGICAL CONTAMINATION SURVEY FORM

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RO SUPERVISION SIGNATURE

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		ROCKY FLATS	ENVIRONME	NTAL TECHNOLOGY SITE	
	I	NSTRUMENT DATA	V.		X
	Mfg. Eberline	Mfg. EberLine	Mfg. Eberline	Survey Type: Contamination	
		Model SAG4	Model BC4	Building: 904	do
	Serial # <u>195</u>	Serial # 824	Serial # 704	Location: 904 Pad Office	Locker
	Cal Due <u>9-13-9</u> 8		Cal Due 12-11-98	Purpose: week/y	TENT 10
N	Bkg. 0,0	Bkg. D, D	Bkg. 35		
	Efficiency 33%	Efficiency 33/o		RWP #J1	
I	MDA _620	MDA /20	MDA _ 200	Date: 2-16-98 Time: 15	40
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	Serial # 702	Serial # 1680	Serial #	Print name Signature	Cinp. #
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PAGE 24 OF

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RADIOLOGICAL CONTAMINATION SURVEY FORM

SURVEY RESULTS (DPM/100 CM")

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RADIOLOGICAL CONTAMINATION SURVEY FORM

S.A.C. - 4 EBER. EBER. PAGE 1 OF REMOVABLE CONTAMINATION S.A.C. - 4 SURVEY INSTRUMENT DATA EBER. SURVEY INSTRUMENT DATA EBER. TOTAL CONTAMINATION MDA = CF X [2.71 + 4.65 \ BACKGROUND (CPM)] EBER. EBER. B.C. 4 N.E. TECH S.A.C. - 4 ELECTRA EBER. B.C. 4 EBER. CAL DUE DATE: CAL DATE DATE: CAL DUE DATE: BACKGROUND: SFFICIENCY: CAL DATE: CAL DATE: CAL DATE: SERIAL #: SERIAL #: SERIAL #: MODEL: MODEL: MODEL: MDA: MFR: MFR: MFR: DATE DATE RO SUPERVISION PRINT NAME EMP# RO SUPERVISION SIGNATURE ROOM: KIME: OTHER PRL PERFORMED BY (PRINT NAME): RCT SIGNA TURE BUILDING/LOCATION: PAWRE ITEM DESCRIPTION: REVIEWED BY: SQG NUMBER: COMMENTS: DATE FOR:

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I	NSTRUMENT DATA	1		
Mig. Esewhine	Mfg. Boenine	Mfg.	Survey Type: Cour	tamination Some
Model SAC4	Model SAC-4	Model 2	Building: 904	Pad
Serial # 795	Serial # <u>824</u>	Serial #	Location: 904A	dT-7. T8-T9 TIO, TH Break
Cal Due <u>9-13-98</u>	Cal Due <u>9-24-98</u>	Cal Due _\\2	Purpose: Rosm Fock	er Rody, solvee locker
Bkg. 0.0	Bkg. <u>0.0</u>	Bkg.	Week	9(00000 (1019)
Efficiency +33%	Efficiency 33%	Efficiency	RWP #:	
MDA Zod	MDA zodina	MDA	Date: 7-22-98	Time: <u> 2 & 60</u>
Mrg. Ebentine	Mig. Eberline	Mfg.	Date. 1-22-16	1110.000
Model Be-4	Model Bc-4	Model	RCT: HANKINS	1 Hank
Serial # <u>Bc704</u>	Serial # Bc 702	Serial #	Print name	Signature
Cal Due 12-11-98	Cal Due 12-15-98	Cal Due	/4 /	201
Bkg. 36	Bkg. 38	Bkg.	RCT: Whore	10 leures
Efficiency 25% MDA 200 d/y	Efficiency 25% MDA d/m	Efficiency	Print name	Signature Emp. #
	7.22.98	WDA	<u> </u>	
PRL#:				
Comments:				
*Se	e attached	survey form	I for Survey r	esults
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		SURVEY R	ESULTS	
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Date Reviewed	5/98 RS Supe	2.55.		

RADIOLOGICAL SAFETY Drawing Showing Survey Points

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Se 7.22.18 LOG NUMBER:

LADIOLOGICAL CONTAMINATION SURVEY FORM
SURVEY RESULTS (DPM/100 CM²)

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PAGE 2

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		201100000000000000000000000000000000000	REKO	REMOVABLE	TOTAL	TOTAL BETA/
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	Tent 10 Radiological Operations Area or Equipment Drawing Showing Survey Points Belling to the state of th	(15 Total Survey Points
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RADIOLOGICAL CONTAMINATION SURVEY FORM

EBER. EBER. PAGE 1 OF REMOVABLE CONTAMINATION S.A.C. - 4 SURVEY INSTRUMENT DATA EBER. EBER. SURVEY INSTRUMENT DATA TOTAL CONTAMINATION S.A.C. - 4 EBER. EBER. B.C. 4 N.E. TECH S.A.C. - 4 EBER. ELECTRA EBER. B.C. 4 CAL DOR DATE: CAL DUE DATE: CAL DUE DATE: BACKGROUND: SFFICIENCY: CAL DATE: CAL DATE: CAL DATE: SERIAL #: SERIAL #: SERIAL #: MODEL: MODEL: MODEL: MFR: MFR: MDA: MFR DATE RO SUPERVISION PRINT NAME EMP# ROOM: TIME OTHER PRL PERFORMED BY (PRINT NAME): RCT SIGNATURE BUILDING/LOCATION: PAWRE ITEM DESCRIPTION: RWP REVIEWED BY: OG NUMBER: COMMENTS: DATE FOR:

MDA = CF X [2.71 + 4.65 \ \sum BACKGROUND (CPM)]

RO SUPERVISION SIGNATURE

DATE

	AUCA	I TLAIS	ENVIRUNME	WAAL IEC	HNODOGI	SILE	÷					
	INSTRUM	IENT DATA	4									
Mfg.EBERLINE_	Mfg.EB	ERLINE_	Mfg.EBERLINE_	Survey Type	CONTAMIN	NATION						
Model SAC-4	_ Model S	AC-4	Model SAC	Building: _9		·						
Serial # <u>795</u>		824	Serial # <u>Bc 704</u>	Purpose: weekly control Point Survey								
Cal Due <u>9-13-91</u>	3 Cal Due	9-24-98	Cal Due 12-11-98									
Bkg. <u>0.0</u>		0.0	Bkg. <u>38</u>	TENT 10	70-58							
Efficiency 33%		cy <u>33%</u>										
MDA 20d/m	_ MDA _	20 d/m	MDA 2000/m			m:						
MC COCOLOGO	146 NG	TRAIL	As an appear	Date: 7-3	0-48	Time: 050	<u>o</u>					
Mfg.EBERLINE		TECH_	Mfg.NE.TECH	RCT: MJO		21						
Model BC-4 Serial # Bc 702_		LECTRA_	Model ELECTRA Serial		nt name	Muu-3 Signature	-					
Cal Due 12-15-98			Cal Due	riii	it itatile	Signature	ъшр. п					
Bkg. 38	Bkg		Bkg.	RCT:	1		, ,					
Efficiency 25%	Efficience	cv E	Efficiency		nt name	Signature	Emp. #					
MDA 20 200	%MDA	3 —	MDA			3.6						
PRL#:	Survey	results	, for each	survey, are	located	(on atta	iched					
			SURVEY R	FOIL TO		•						
an cou		5.1				· DID	DOT					
REMOV	ABLE	DII	RECT I	REMOV	ABLE	DIK	ECT					
ALPHA	BETA	ALPHA	BETA	ALPHA	BETA	ALPHA	BETA					
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Date Reviewed 210	RS Su	pervision:	yamles (
1.26	_ · · _	Print	Name	Signature	1	Emp. #						

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE RADIOLOGICAL SAFETY **Drawing Showing Survey Points**

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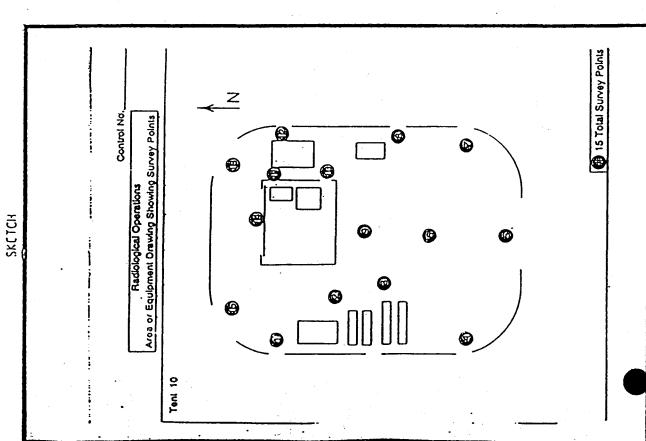
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URVEY FORM SURVEY RESULTS (DPM/100 CM')	צבאסאפרב	LOCATION/DESCRIPTION	120 1200	620		620	720 750	220	750	620	720 6200	1220	77	27		620 6200	720 750		. 44.2.2	25.30		
S N		swire,		2	8	4	B	و	7	æ	2	0)	11	12	3	14	12					_
ADIOLOGICAL CONTAMINATION SURVEY FORM SURVEY FORM SURVEY RESU				Control No.	Rediological Operations Area or Equipment Drawing Showing Survey Points	Ten 10	New v.		Z / 😜									S			15 Total Survey Points	7



RADIOLOGICAL CONTAMINATION SURVEY FORM

S.A.C. - 4 EBER. EBER. B.C. 4 PAGE 1 OF REMOVABLE CONTAMINATION S.A.C. - 4 SURVEY INSTRUMENT DATA EBER. SURVEY INSTRUMENT DATA B.C. 4 EBER. TOTAL CONTAMINATION S.A.C. - 4 EBER. EBER. B.C. 4 N.E. TECH S.A.C. - 4 ELECTRA EBER. EBER. B.C. 4 CAL DUE DATE: CALDUE DATE: CAL DUE DATE: BACKGROUND: SPFICIENCY: CAL DATE: CAL DATE: CAL DATE: SERIAL #: SERIAL #: SERIAL #: MODEL: MODEL: MODEL: MFR: MFR: MDA: MFR DATE RO SUPERVISION PRINT NAME EMP# ROOM: TIME: OTHER PRL PERFORMED BY (PRINT NAME): RCT SIGNATURE BUILDING/LOCATION: P/WRE ITEM DESCRIPTION: REVIEWED BY: LOG NUMBER: COMMENTS: DATE FOR:

MDA = CF X [2.71 + 4.65 / BACKGROUND (CPM)]

DATE

RO SUPERVISION SIGNATURE

INFORMATION ONLY

Page_l of 2	RS FORMS 07.02 ₋ 01
ROCKY FLATS ENVIRONME	
INSTRUMENT DATA Mfg.EBERLINE Mfg.EBERLINE Mfg.EBERLINE Mfg.EBERLINE Mfg.EBERLINE Model SAC-4 Serial # 795 Serial # 824 Serial # Bc204 Cal Due 9-13-98 Cal Due 9-24-98 Cal Due 12:11-98	Building: 904
Bkg. O. Bkg. O. Bkg. 33 Efficiency 33% Efficiency 25% MDA 2000pm MDA 2000pm MDA 2000pm Mfg.EBERLINE Mfg.NE.TECH Mfg.NE.TECH	Date: 8-5-98 Time: 0930
Model BC-4 Model ELECTRA Model ELECTRA Serial # Serial # Serial # Serial # Cal Due Cal Due Bkg. Bkg. Bkg. Efficiency 25th Efficiency Efficiency MDA MDA MDA	RCT: Woyo 7 1 Million Signature Emp. # RCT: / / / / / / / / / / / / / / / / / / /
PRL#: Comments: See reverse side for map	
<u>SURVEY RI</u>	ESULTS
REMOVABLE DIRECT ALPHA BETA ALPHA BETA	REMOVABLE DIRECT ALPHA BETA ALPHA BETA
1. \(\alpha \ \ 20 \) \(\alpha \ \ 200 \) \(\alpha \ \alpha \ \ 200 \) \(\alpha \ \alpha \ \alpha \ \ 200 \) \(\alpha \	Q Q
12 20 2200 33.	

<u> 200</u> <u>،</u>4. 13/20 2 908/5 86 6200 35. 14. 620 6200 36. 2200 620 37. 16. 38. 17. 39. 18. E.S. 8 40. 41. 42. 21. 43. 22.

Date Reviewed: 5716 98 RS Supervision:

****44.

Emp.#

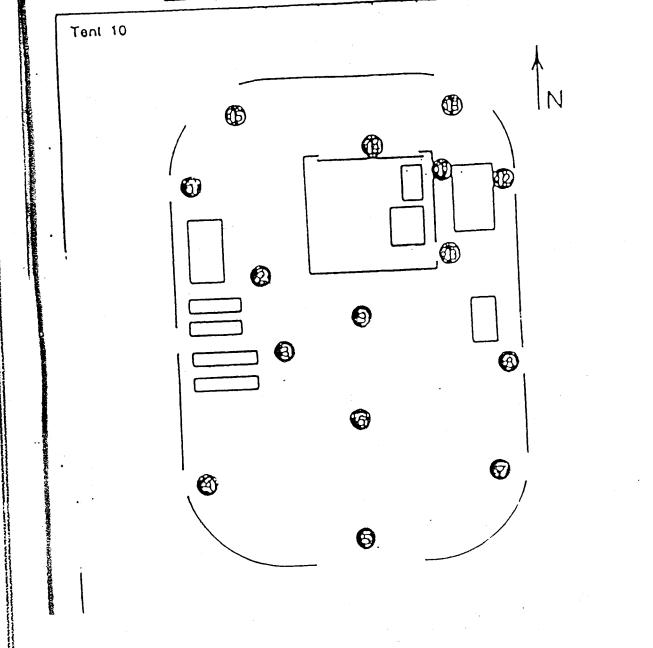
ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

Radiological Operations

Area or Equipment Drawing Showing Survey Points



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	ROCKY FLATS	S ENVIRONME	ENTAL TECHNOLOGY SITE	
r	NSTRUMENT DATA	A (19 e/13/9		
Mfg.EBERLINE_	Mfg.EBERLINE_			
	Model SAC-4			
Scrial #	Serial # 824	Serial # BC7-4	Location: TENT 10	
Cal Due 9/13/98	Cal Due 9/24/98	Cal Due 12/11/98	Purpose: WEEKLY SURVEY	
	Bkg. los		- [
Efficiency 133%	Efficiency 33%	Efficiency 25%	, RWP #: <u>NA</u>	
MDA _ <2-	MDA _ LZO	MDA _ 2200	- 1 1 1	
			Date: 9/3/99 Time: 109	
,,	Mfg.NE.TECH	~ —		
<u> </u>	Model ELECTRA_			
Serial # Bc702		Serial #	Print name Signature En	np. #
Cal Due 12 15 98	1	Cal Due	_	
Bkg. <u>38</u>	Bkg.	Bkg	RCT:/	
Efficiency 25%		Efficiency	Print name Signature En	np. #
MDA 2200	MDA	MDA		
	L			
PRL#:				
Comments:				

				SURVE	RESU	LTS			
	REMO	VABLE	DIF	LECT		REMOV	'ABLE	DIR	ECT
} _	ALPHA	BETA	ALPHA	BETA		ALPHA	BETA	ALPHA	BETA
1.	270	L290		!	23.				
2.	420	L290			74.				
3.	120	LZas			25.				
4.	LZ3	L-7=0			26.				
5.	LZ2	4200		7	27				
6.	L 20	2700			_28				
7.	620	1200			_29				
8.	220	1200			_30				
9.	120	1200			_31				
10.	420	2200			_32			/	
11.	L20	LZau			33		\mathcal{L}		
12.	620	1200)	4د		1-11		
13.	120	1200		//	_35		1 /8/B/9	2	
14.	420	1200		10/0	_36		1/1/1/4		
i 15.	6200	1200	(18 3 98	_37		/ 11		
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21.			/		_43	/			
22.			<u>/</u>		44.	\			<u> </u>
Date 1	Reviewed 8 2	6 98 RS S	upervision:	DUNCE &	3	1			

Page 2 of 2 ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE RADIOLOGICAL SAFETY **Drawing Showing Survey Points** Radiological Operations Area or Equipment Drawing Showing Survey Points Tent 10 (1) 0 9 0 **6** 6

Page 1 of 2 INFORMATION ONLY

	ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE								
n	INSTRUMENT DATA								
	Mfg.EBERLINE_		Survey Type: CONTAMINA	ATION					
Model SAC-4	Model SAC-4	Model SAC-	Building: 904						
Scrial # 795	Serial # 824	Serial # Bc704	Location: TENT	10					
			Purpose: WEEKLY SUR	VET					
Bkg. 0-0	Bkg. <u>0.2</u>	Bkg	G- 81	9-98					
Efficiency 33%	Efficiency 33%								
MDA 120den	MDA 220 dpin								
			Date: 8-19-98	Time: 0836	١				
Mfg.EBERLINE	Mfg.NE.TECH	Mfg.NE.TECH	_						
Model BC-4	Model ELECTRA_	ModeLECTRA	RCT: MUNOZ 1	Muser					
Serial # <u>BC 702</u>	Serial #	Serial #	Print name	Signature	Emp. #				
Cal Due 12.15.58	Cal Due	Cal Due Lo	cu ô						
Bkg. 38	Bkg.	Bkg.	RCT:/		1				
Efficiency 25%	Efficiency	Efficiency	Print name	Signature	Emp. #				
MDA - 200den	MDA	MDA							
PRL#:	74-48 <u> </u>								
Comments:					· 				
	······································								
			<u> </u>						

	REMO	VABLE	J DIF	RECT	REMO\	VABLE	l DIR	ECT
-	ALPHA	BETA	ALPHA	BETA	ALPHA	BETA	ALPHA	BETA
1.	<20	6200		23.				
	620	1200						
3.	620	6200						
	220	6200		26				
5.	220	2200		27				
6.	420	6700		27. 28.		10-		
7.	620	6200		29.		18,		
8.	220	4200	- Q	30		1		
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10.	220	6200	(5/	32		15	<u> </u>	
H.	220	4200	7	33			b .	
12.	220	< 200		.4د				
13.	620	<u> </u>		35.				
14.	220	200		36.				
5.	620	2200		37.		·		
6.				38.				
7.				39.	-			
18.		-		40.				
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Date Reviewed: 9/3/98 RS Supervision: K. Costa / M. Signature

Print Name

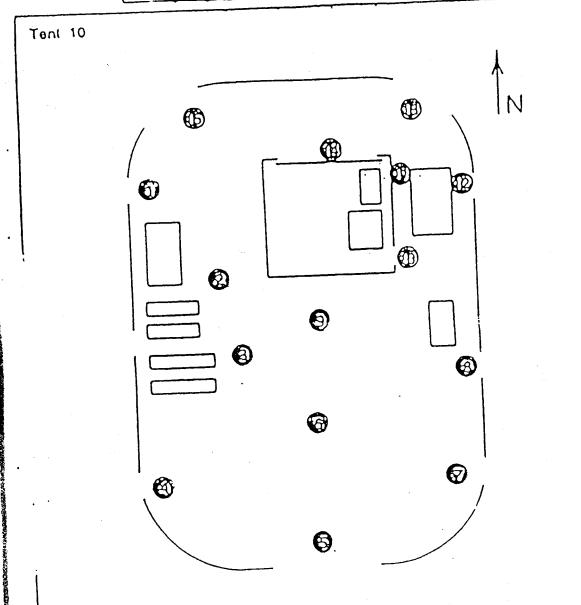
Signature

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE RADIOLOGICAL SAFETY

Drawing Showing Survey Points

Radiological Operations

Area or Equipment Drawing Showing Survey Points



Page 1 of 2

RS FORMS 07.02-01

·	ROCKY FLAT	S ENVIRONME	NTAL TECHNOLOGY SITE					
n	INSTRUMENT DATA							
	Mfg.EBERLINE_		Survey Type: CONTAMINATION					
Model SAC-4	Model SAC-4	Model SAC4	Building: 904					
Scrial # 795	Serial # 824	Serial # Bc 704	Location: TENT 10					
Cal Due <u>9-13-9</u> 8	Cal Due 9-24-98	Cal Due 12-11-98	Purpose: WEEKLY SURVE;					
Bkg. <u>0.0</u>	Bkg. <u>0.2</u>	Bkg. <u>36</u>	aga 12 8-2 8-27-98					
Efficiency 33%	Efficiency 33%	Efficiency 25%	RWP #:					
MDA 20dja	MDA 20 dpm	MDA 200dpm						
		•	Date: 8-27-98 Time: 0930					
Mfg.EBERLINE	Mfg.NE.TECH	Mfg.NE.TECH						
Model BC-4	Model ELECTRA_	Model ELECTRA	RCT: Munoz & Minus					
Serial # Bc 762		Serial #	Print name Signature					
Cal Due 12-15-98	Cal Due	Cal Due	<u> </u>					
Bkg. <u>36</u>		Bkg	RCT:					
Efficiency 25%		Efficiency E	Print name Signature Emp. #					
MDA 200dpm	MDA 💮	MDA						
66-								
PRL#:			•					
Comments:	Comments:							
	See Page 2 of 2 for now survey map							
	J -							

	SURVEY RESULTS REMOVABLE DIRECT REMOVABLE DIRECT								
	KEMO	VABLE	DIR	ECT		REMOV	/ABLE	DIR	ECT
_	ALPHA	BETA	ALPHA	BETA		ALPHA	BETA	ALPHA	BETA
1.	620	< 200			23	\		,	
2.	426	4200			24				
3.	£20	_			25				
4.	420	6200			26				
5. _	420	_ 4206		<i>₩</i>	27				
6 .	620	4200			28				
7.	426	4200		9,5	29.				
8.	620	4200	٠-		30.		18		
9.	220	6200		N	31.		E		
10.	<20	L200		À	32.		Sep. 1		
H.	420	2200		7	33.		13		
12.	420	<u> </u>			34			6	
13.	420	<200			35.				
	<20	6200			36.				
i5	c 20	<200		/	37.		4		
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Date Reviewed: 9/3/98 RS Supervision: 16. Gadina Signature

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ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE RADIOLOGICAL SAFETY **Drawing Showing Survey Points** Radiological Operations Area or Equipment Drawing Showing Survey Points Tent 10 1 **(D)** 6 0 (4) ❸.



Page of

	ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE								
I	NSTRUMENT DAT	A							
Mfg.EBERLINE_	Mfg.EBERLINE_	Mfg.EBERLINE_	Survey Type: CONTAMINATION						
	Model SAC-4	Model SAC4	Building: 904						
Serial # _ 795	Serial # 824	Serial # 704	Location: TENT 10						
Cal Due 9-/3-98	Cal Duc 9-24-98	Cal Due 12-11-98							
Bkg		Bkg37							
Efficiency 33%			RWP#:						
MDA 20 dpm	MDA 20 don	MDA 200dpm							
1	, .	/	Date: 9.2.98 Time: 1020						
Mfg.EBERLINE									
Model BC-4	Model ELECTRA_	Model ELECTRA	RCT: M.E. VAUGIN 17. E.						
Serial # <u>702</u>		Serial #	Print name Signature	Emp. #					
	Cal Due	Cal Due							
Bkg. <u>39</u>	Bkg	Bkg	RCT:/	1					
Efficiency 25%	Efficiency	Efficiency	Print name Signature	Emp. #					
MDA 200d,om	MDA	MDA		•					
PRL#:									
Comments:									

	\ .			SURVEY RE	SULTS			
	REMO	VABLE	DIR	RECT	REMOV	/ABLE	DIR	ECT
!	ALPHA	BETA	ALPHA	BETA	ALPHA	BETA	ALPHA	BETA
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4. 5.				26				
6.				27 28.				
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2 21.		15		42				
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	Δ,	660				10		
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ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE RADIOLOGICAL SAFETY **Drawing Showing Survey Points** Radiological Operations Area or Equipment Drawing Showing Survey Points Tent 10 **(b)** 6 0 0 **3**.

	ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE						
1)	NSTRUMENT DATA	A					
	Mfg.EBERLINE_	Mfg.EBERLINE_	Survey Type: CONTAMINATION				
	Model SAC-4		Building: 904				
Scrial # _755	Scrial # 824	Serial # <u>Bc 838</u>	Location: TEAT 10				
Cal Due <u>7-13-98</u>	Cal Due 7-24-98	Cal Due 1-9-99	Purpose: WEEKLY SURVEY				
Bkg	Bkg	Bkg 39	9-9-98				
Efficiency 33%	· — — —	Efficiency 25%	RWP#:				
MDA 20 dyn	MDA 20 dpn	MDA 200 dpm					
Me- CDEDI NIC		•	Date: 9-9-98 Time: 0930				
		Mfg.NE.TECH	100 Cina				
0		Model ELECTRA	RCT: Munz / Manne				
9.1	Serial # Cal Due	Serial #\s	Print name Signature Emp. #				
U =	7.51	Cal Due	a-9-9-88				
	Efficiency 2	Bkg	RCT: /				
	MDA TO	MDA O	Print name Signature Emp. #				
	9-9-98						
PRL#:	1-1-10						
Comments:							
	Sée J	ince Mas	for survey points				
		t 4	9 /201-01-				

	SURVEY RESULTS							
	REMO	VABLE	DIF	RECT	REMOV	VABLE	J DIR	ECT
∭ .	ALPHA	BETA	ALPHA	BETA	ALPHA	BETA	ALPHA	BETA
11,	. E				\wedge			
1. 2.	420	4200			23			
3.	420	6200 6200			24			
4.	420	2200 2200			25. 26.			
5.	620	د کوه د کوه		K 1 1	27.			
6.	420	4200	,		28.			
7.	220	4200			29.			
8.	420	- 6500			30.			
	220	~200	Ų	/	31.			
	620	6200			32	E		
	426	<u> </u>			33		S	
	626	4200	!		4		S.	
	420	4200			35		3/	
14.	220	2200			36		6	
	620	£200	/		37			
17.			·		38		\longrightarrow	
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Page 2 of 2 ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE RADIOLOGICAL SAFETY **Drawing Showing Survey Points** Radiological Operations Area or Equipment Drawing Showing Survey Points Tent 10 (1) 0 (4) ❸.

RMATION ONL RS FORMS 07.02-01 ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE INSTRUMENT DATA Mfg.EBERLINE Mfg.EBERLINE Mfg.EBERLINE Survey Type: CONTAMINATION Model SAC-4___ Model SAC-4___ Model SAC-4_ Building: 904 Scrial # 767 Serial # 824 Serial # 838 Location: TENT 10 Cal Due 10-14-58 Cal Due 9-24-58 Cal Due 1-9-58 Purpose: WEEKLY SURVEY Bkg. O.1 Bkg. 0.0 Efficiency 33% Bkg. _ 40 Efficiency 33/6 Efficiency 25% RWP#: MDA 120 dem MDA 120 dem MDA 1200dem Time: 14/0 Mfg.EBERLINE Mfg.NE.TECH___ _Mfg.NE.TECH_ Model BC-4__ Model ELECTRA Model ELECTRA Serial # 202 Serial# Serial # Cal Due 12-15-98 Cal Due Cal Due Bkg. 41 Bkg. Bkg. RCT: Efficiency 25/6 **Efficiency** Efficiency Print name Emp.# MDA <u>2200 dem</u> MDA **M**DA PRL#: Comments:

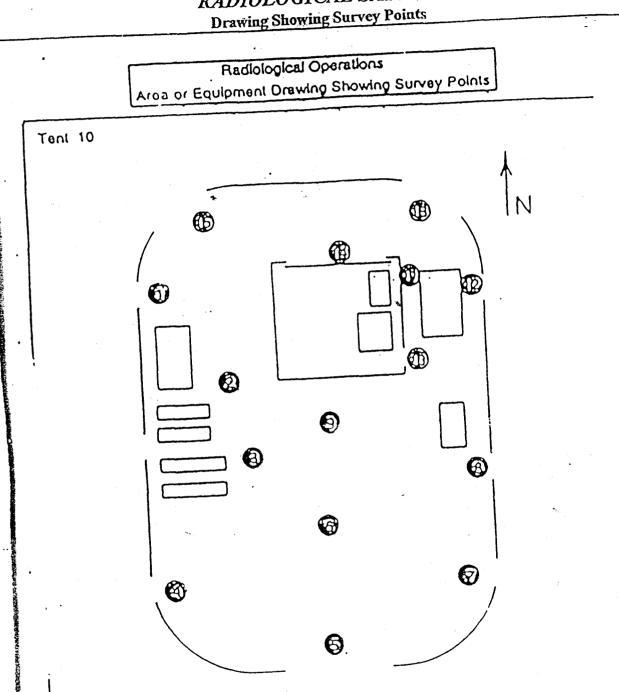
SURVEY RESULTS							
REMOVABLE	DIRECT	REMOVABLE	DIRECT				
ALPHA BETA	ALPHA BETA	ALPHA BETA	ALPHA BETA				
1. 220 <200	 	23					
2 200 2200	 	24					
3. 420 4200		25.					
4. 120 1200	 	26.					
5. < 200 < 200	 	27.					
6. 270 4200		28.					
7. <u>< 20</u> 6 <u>< 206</u> 8. <u>< 20</u> 6 <u>< 20</u> 6		29.					
		30					
9. <u>220 2200</u> 10. <u>120 2200</u>		31					
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13. 120 1200	1-120	34					
1		36.	10,				
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16 /20 /200		38.					
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18.		Z40.					
19.	4	F41.					
20	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	41.					
21.		\\ 43.					
22.		44.					
Date Reviewed: 9/22/98 RSS	Date Reviewed: 9/22/48 RS Supervision: J. Ewell 1 Full						

Print Name

Signature

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY



	ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE										
n	NSTRUMENT DAT	A									
Mfg.EBERLINE_	Mfg.EBERLINE_	Mfg.EBERLINE_	Survey Type: CONTAMINATION								
Model SAC-4	Model SAC-4	Model SAC-4	Building: 904								
Serial # _767_	Serial # 795	Serial # Bc 838	Location: TENT 10								
Cal Due 10-14-98	Cal Due 3.16-705	ACal Due 1-9-99	Purpose: WEEKLY SURVEY								
Bkg. 0.1	Bkg. <u>0.2</u>	Bkg. 39	<u> </u>								
Efficiency 33%			RWP#:								
MDA 20 dyn	MDA 20dem	MDA 200dpm									
			Date: <u>9-23-98</u> Time: <u>0900</u> RCT: Musez CM								
	Mfg.NE.TECH		10.1								
	Model ELECTRA_		the fire								
Serial # Bc 702		Serial #	Print name Signature								
Cal Due 12.15- 18		Cal Due									
Bkg. 38	Bkg. K	Bkg.	RCT: / /								
Efficiency 25%		Efficiency	Print name Signature Emp. #								
	MDA	MDA	<u> </u>								
DDY #	-9.23.7g										
Comments:		00 910 0 -	9								
	٠	ee Map Pag	26								

SURVEY RESULTS											
	REMO	VABLE	DIE	RECT	REMO\	/ABLE	DIR	ECT			
-	ALPHA	BETA	ALPHA	BETA	ALPHA	BETA	ALPHA	BETA			
1.	420	2200		23.							
2.	420	4200		24.							
3.	420	<200		25.							
4.	420	2200		26							
5.	420	2200		27							
6.	620	£200		28							
7 .	420	£200		29							
8.	420	£200	•	30		<i>b</i>					
9.	420	6200		31		- Z					
	220_	6200		32.		1/2					
	420	C200		33			is a second				
12.	420	4200		34			150				
13.	420	4200		35							
14.	620	£200		36							
15.	C20	4200		37			-				
16				38							
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21.				43				$\overline{}$			
22				44							
22 Date 1	Reviewed: 10/	5/91 RSS	upervision: 0	1, Each ,	Sw1.	U					

Print Name

RS FORMS 07.02-01 Page 2 of Z ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE RADIOLOGICAL SAFETY **Drawing Showing Survey Points** Radiological Operations Aroa or Equipment Drawing Showing Survey Points Tent 10 (1) 0 0 @ **6**.

Page 1 of LORMATION OF

	ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE										
r	NSTRUMENT DAT	A									
Mfg EBERLINE_	Mfg.EBERLINE_	Mfg.EBERLINE_	Survey Type: CONTAMINATION								
Model SAC-4			Building: 904								
Scrial # 767	Serial # <u>795</u>	Serial # <u>Bc 838</u>	Location: TENT 10								
Cal Due 10-14-98	Cal Due 3.16.99	Cal Due 1-9-99	Purpose: WEEKLY SURVET								
Bkg. 0.1	Bkg. <u>0.7</u>	Bkg. <u>43</u>	a- 9-30-98								
Efficiency 33%	Efficiency 33%	Efficiency 25%	RWP #:								
MDA 20den	MDA 20 don	MDA Zoodom									
•	(•	Date: 9-30-98 Time: 0900								
Mfg.EBERLINE		Mfg.NE.TECH									
	Model ELECTRA_	Model ELECTRA	RCT: Monoz & Minu								
Serial # Bc 702	Serial #	Serial #	Print name Signature Emp. #								
Serial # <u>Bc 702</u> Cal Due <u>12-15-98</u> Bkg. <u>36</u>	Cal Due	Cal Due	6 _ 9-30-98								
Bkg. <u>36</u>	Bkg	Bkg	RCT:								
Efficiency 25%	- — —	Efficiency	Print name Signature Emp. #								
MDA 200dem	MDA	MDA									
a	9-30-58										
PRL#:											
Comments:											
Lee Lurvey Map Pg. 2											
1		1	' 4								

) <u></u>			SURVEY R	ESULTS			
	REMO	VABLE	DIF	RECT	REMOV	VABLE	DIR	ECT
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3.	220	4200		25				
4.	220	L200						
5.		6200		27			<u> </u>	· · · · · · · · · · · · · · · · · · ·
6.	420	6200	·	/ 28		<u> </u>		
7.	۷26	4200						
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Date I	Reviewed: <u>60/</u> 0	stat RS Si	apervision: J	. Ewell 1	Signature	M		

Page 2 of 2 ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE RADIOLOGICAL SAFETY **Drawing Showing Survey Points** Radiological Operations Area or Equipment Drawing Showing Survey Points Tent 10 **(B)** 0 0 (4) 8

	101.07-01										
ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE											
INSTRUMENT DATA											
Mfg.EBERLINE_ Mfg.EBERLINE_ Mfg.EBERLI	NE_ Survey Type: CONTAMINATION										
Model SAC-4 Model SAC-4 Model SAC-4	Building: 904										
Scrial # 1050 Scrial # 1198 Scrial # 91	Location: TENT 10										
Cal Due 2-26-99 Cal Due 2-14-99 Cal Due 2-	4.79 Purpose: WEEKLY SURVEY										
Bkg. 0,0 Bkg. 0,6 Bkg. 47											
MDA 220 don, MDA 220 don MDA 2200	den 10-7-58										
	Date: 1430 Jy Time: 14.30										
Mfg.EBERLINE Mfg.NE.TECH Mfg.NE.TEC	H /										
Model BC-4 Model ELECTRA Model ELECT	TRA RCT: HANKING Has										
Serial # 706 Serial # 9 Serial # Cal Due 12-22-98 Cal Due Cal Due	Print name Si										
Cal Due 12-22-98 Cal Due Cal Due											
Bkg. 38 Bkg. Bkg.	© RCT: //										
Efficiency 25 6 Efficiency	Print name Signature Emp. #										
MDA 200 of MDA MDA	8										
7											
PRL											
Comments:											
-2											
28											
SURVI	EY RESULTS										
REMOVABLE DIRECT	REMOVABLE DIRECT										
ALPHA BETA ALPHA BETA	ALPHA BETA ALPHA BETA										
1. <20 /200	23.										
2. <20 <200	24.										
3. <20 <200	25.										
4. 220 2200	26.										
5. 200 2200											
6. 220 (200	21.										
7. 220 4200	29.										
8. 220 2200											
9. 420 4200	30.										
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217	43.										
22.	44.										
Date Reviewed: Wolast RS Supervision: BJ J. Ewell	well and										
Date Reviewed: 10/13/48 RS Supervision: F J. RWWI	Signature Enip. #										
A 11	Organico Citip. #										

RS FORMS 07.02-01 Page 2 of 2 ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE RADIOLOGICAL SAFETY **Drawing Showing Survey Points** Radiological Operations Area or Equipment Drawing Showing Survey Points Tent 10 (1) (3) 0

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE										
п	NSTRUMENT DATA	A 10	1-14-98							
	Mfg.EBERLINE_		Survey Type:	CONTAMINA	<u> </u>					
	Model SAC-4		Building:							
	Serial # <u>795</u>			TENT 1						
	Cal Due 3.16-99	Cal Due 1-9-99	Purpose: WEE	KLY SURY	67					
Bkg. C.C CPM	Bkg. O.1 com	Bkg. 40 cpm								
Efficiency <u>33</u>	Efficiency <u>133</u>	Efficiency 125	RWP #:	·						
MDA 20dpm	MDA acdom	MDA 200 day								
1	•	`	Date: 10-17	<u>9-98</u> T	ime: <u>1345</u>					
	Mfg.NE.TECH				20-1					
	Model ELECTRA_	Model ELECTRA	RCT: PE	vezich 1	Everent					
	Serial #	Serial #		name	Signature	Emp.#				
Cal Due 12-15-98	Cal Due	Cal Due				•				
Bkg. 42 cpin	Bkg	Bkg				1				
Efficiency 125			Print	name	Signature	Emp.#				
MDA Decopon	MDA	MDA								
				_						
PRL#:										
Comments:			·							
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	SURVEY RESULTS												
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5.	$\frac{\langle}{\langle}$	<u> 20</u>	5	260	 			27					
6.	~	<u> 20</u>	<	200				28					
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Date Reviewed: 6 98 RS Supervision: Print Name

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE RADIOLOGICAL SAFETY **Drawing Showing Survey Points** Radiological Operations Area or Equipment Drawing Showing Survey Points Tent 10 2**® (**) 604 1007 **0**9 **9**8 **1**0 12 **@**11 **®**i≤ **6**).

Page (of +		MOLAN	IIY	RS FORMS	RS FORMS 07.02-01	
	neorma	SENVIRONME	NY ENTAL TECHNOLOGY	SITE		
r	NSTRUMENT DAT	A /0	19.98			
Mfg.EBERLINE_	Mfg.EBERLINE_	Mfg.EBERLINE_	Survey Type: CONTAMINA	TION		
Model SAC-4			Building: 904			
Scrial # 824			Location: TENT	10		
Cal Due 3.2/.99			Purpose: WEKLY SUR	187		
Bkg. C.Ocan	Bkg. <u>C.OCP4</u>	Bkg. 4/com				
Efficiency 33	Efficiency		RWP#:			
MDA <u>Ledpm</u>	MDA 20dpm	MDA 200dpm				
	/		Date: 10-19-98	Гіте: <u>1340</u>		
	Mfg.NE.TECH			/		
	Model ELECTRA_		RCT: MALLOWSKI 1			
Serial # 702	Serial #	Serial #	Print name	Signature	Emp. #	
Cal Due 12-15-9	SCal Due	Cal Due				
Bkg. Ste com	Bkg	Bkg	RCT:/		1	
Efficiency 125	Efficiency	Efficiency	Print name	Signature	Emp.#	
MDA 200 clpm	MDA	MDA				
PRL#:						
Comments:						
			·			
		CHDVEV D	ECH TC			
· ·		SURVEY R	ESULIS			

	SURVEY RESULTS												
	REMO	VABL	E	1	DIR	ECT		REMOV	'ABLE	1	DIR	ECT	
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3.	< 20 < 20	-	200										
4.		2	201				25						
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7.	< 20	4	200				28				-		
8.			200		- $+$		29						
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22.							44				•		

Bate Reviewed: 10/23/98 RS Supervision: J. Ewell
Print Name

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE RADIOLOGICAL SAFETY **Drawing Showing Survey Points** Radiological Operations Area or Equipment Onewing Showing Survey Points Tent 10 **1 @**3 61 **1 0**8 **9**9 10 116 **6**13 13🗑 **1**5 14 **6**.

ROCKY FLATATION MENTAL TECHNOLOGY SITE									
ı	NSTRUMENT DATA								
Mfg.EBERLINE	Mfg.EBERLINE	Mfg.EBERLINE_	Survey Type: CONT	AMINATION					
Model SAC-4	Model SAC-4	Model SAC-4	Building: 904						
Scrial # 824	Serial # _ 795		Location:	TENT 10					
Cal Due3 -21-99	Cal Due.3.16-99	Cal Due /-9-99	Purpose: WEEKLY	SURVEY					
Bkg. G.(Bkg	Bkg. 40	tupes.						
Efficiency <u>133</u>	Efficiency33_	Efficiency	RWP #: <i>N / A</i>						
MDA 20 dam	MDA 20 dom	MDA 200dpm	KWI "						
WIDA 20 april	MOR A Cappy	MIDA AUGAINA	Date: 10.29-98	Time: 0930					
Mfg.EBERLINE Mfg.NE.TECH Mfg.NE.TECH A A A A A A A A A A A A A A A A A A									
Model BC-4	Model ELECTRA	Model ELECTRA	RCT: P Evezich	1 P Cuestos					
Serial # 702	Serial #	Serial #	Print name	Zignature					
Cal Due /2 -15-98	Cal Due	Cal Due	D						
Bkg. <u>40</u>	Bkg.	Bkg.	RCT: NCHOZ	SU / Defense					
Efficiency 25	Efficiency		Print name	Signature Emp. #					
MDA 200 dam	MDA _	MDA		- 2					
PRL#:Comments:									
·		SURVEY R	ESTIL TS						
A .									
REMOVAE	BLE DIE	RECT	REMOVABLE	DIRECT					
ALPHA BI	ETA ALPHA	BETA	ALPHA BETA	ALPHA BETA					
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3. <20 4	200	25							
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5. 40 4	200	27							
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		42							
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Data David	8		,	,					
Date Reviewed:	RS Supervision:	Name	Signature	Emp. #					

Signature

Print Name

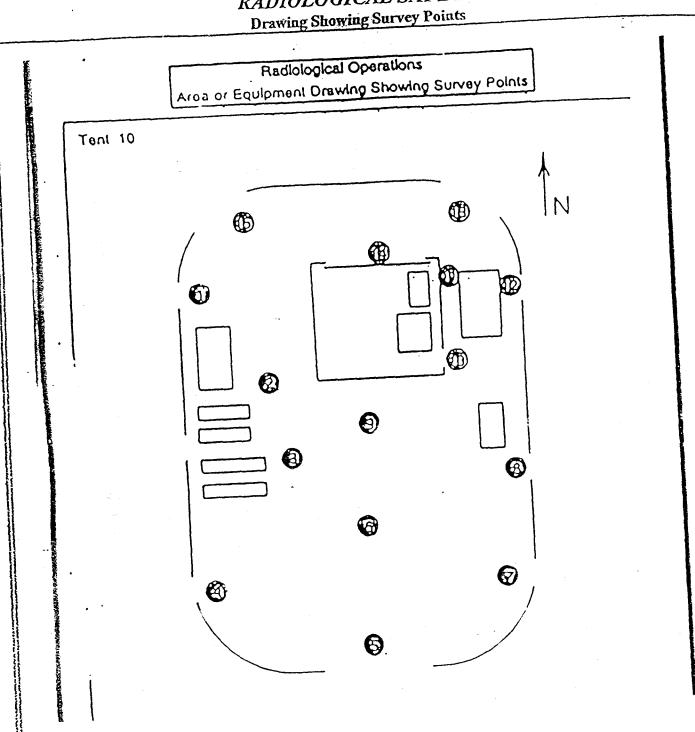
ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE RADIOLOGICAL SAFETY **Drawing Showing Survey Points** Radiological Operations Area or Equipment Drawing Showing Survey Points Tent 10 0 0 **6 6**.

Page 1 of 3	HAL	UNIVI	AHONO	IAFA	· · · · · · · · · · · · · · · · · · ·	RS FORM	S 07.02-01
	ROCE	KY FLATS	SENVIRONME	NTAL TEC	HNOLOG	Y SITE	
n	NSTRUM	MENT DAT	A.	_			
Mfg.EBERLINE_	Mfg.EB	ERLINE_	Mfg.EBERLINE_	Survey Type:	CONTAMI	NATION	
Model SAC-4	Model S	SAC-4	Model SAC4	Building:	904		
Scrial # <u>824</u>	Serial #	795	Serial # 9/6	Location:		T 10	
Cal Due 3-21-99	Cal Duc	3-16-99	Cal Due_3-16-99	Purpose: 42	EKLY SU	RVET	
Bkg. 0 · /	Bkg	0.2	Bkg. 43				
Efficiency 33%	Efficien	icy <u>33%</u>	Efficiency 25%	RWP #:			
MDA _20_	MDA _	20	MDA _200_			. ,	
				Date: 11-9	1-98	Time: 140	>
Mfg.EBERLINE			Mfg.NE.TECH				
Model BC-4		ELECTRA_		RCT: Sick	Nother 1	hid Mulle	=
Serial # <u>8.38</u>			Serial #		nt name	Signature	υшр. п
Cal Due <u>1-9-99</u>			Cal Due				
Bkg36			Bkg	RCT:			
Efficiency 25%		cy		Prin	it name	Signature	Emp.#
MDA 200	MDA_		MDA				
PRL#:Comments:							
			SURVEY R	ESULTS			
REMOVAE	BLE	DII	RECT	REMOV	/ABLE	DIRE	.CT
ALPHA B	ETA	ALPHA	BETA	ALPHA	BETA	ALPHA	BETA

SURVEY RESULTS											
REMOVABLE	DIRECT	REMOV	VABLE	DIR	ECT						
ALPHA BETA	ALPHA BETA	ALPHA	BETA	ALPHA	BETA						
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10. < 20 × 200	1— \ \ \	32	- \'								
12 20 4 200	+	33									
12. <u>20</u> <u>200</u>		34 35.	<u> </u>								
14. < 20 < 200		36.									
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16.		38.		12							
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21.	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	43									
22.	I	44.	l	1							
Date Reviewed: 11/7/18 RSS	Supervision: J. Twell	2 Su	M								
98	Print Name	Signature									

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY



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Page 1 of 2	NFOR	Mix					RS FOR	MS 07.02 ₋ 01
	ROC	KY FLAT	S ENVIR	ONME	VTAL TEC	CHNOLOG		
	INSTRU	MENT DAT	'A					
Mfg.EBERLIN				STINE	Survey Type	CONTAM	IINATION	
Model SAC-4_		SAC-4	- 10	,,,,,,	Building:			
Scrial # 824		795	Serial #	c 9/6	Location:		ST 10	
Cal Due 3-21		e 3-16-99			Purpose: W			
Bkg		0.0	Bkg. 4	74	<		~ 4-4-98	
Efficiency 33		ncy 33%			RWP #:		·	
MDA Zode	_MDA_	20dym	MDA Z	oden			_	
Me EDERI N	E M6- N	TEOU			Date: 11-10	- 48	_ Time:13c	0
Mfg.EBERLIN Model BC-4		E.TECH ELECTRA_	Mfg.NE.TI	ECH	RCT: W	,	71	
Serial # Bc 83	Δ · · ·)	_	Model ELI Serial #				- Vun	
Cal Due 1-9-			Cal Due		Pri	nt name	Signature	G Emp. #
Bkg. 42	Bkg.	- 	Bkg.	1	RCT:		-(1-93	
Efficiency 25	6 Efficien	ncy &	Efficiency			nt name	Signature	Emp. #
MDA Zood	en MDA_		MDA					Silp. #
	an 11-16-9	8 4						***************************************
PRL#:								
Comments:								
								
								 -
			SUR	VEY RE	SULTS			
REMO	VABLE	ı DIF	RECT		REMO\	/ARI F	ı DIR	FCT
ALDUA	BETA	1	1					
ACIDA	BEIA	ALPHA	BETA		ALPHA	BETA	ALPHA	BETA
1. 620	6200	/	1	23.	\			
2. 220	6200		1	24.			1	
3. 220	6200	W		25.				
4. 620	6200			26.				
5. <u>LZO</u>	C200	N. N.		27				
6. <u>220</u>	2200	W/		28				
7. <u>LZo</u>	6200			29				
8. 220	4200	- (<i>J</i> /		30				· · · · · · · · · · · · · · · · · · ·
9. <u>220</u>	6200			31		18		
10. <u>CZo</u>	4200			32				
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12 220	<u> </u>			34			1/2	

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7.	<u> 220</u>	6200	<u></u>]/	⊥_\		29.				
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ė.	420	c200	/				37				
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22			í		i		144	- 1	- 1		

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE RADIOLOGICAL SAFETY **Drawing Showing Survey Points** Radiological Operations Area or Equipment Drawing Showing Survey Points Tent 10 (1) 9 0 **6** 6

Page 1 4NFORMATION ONLY

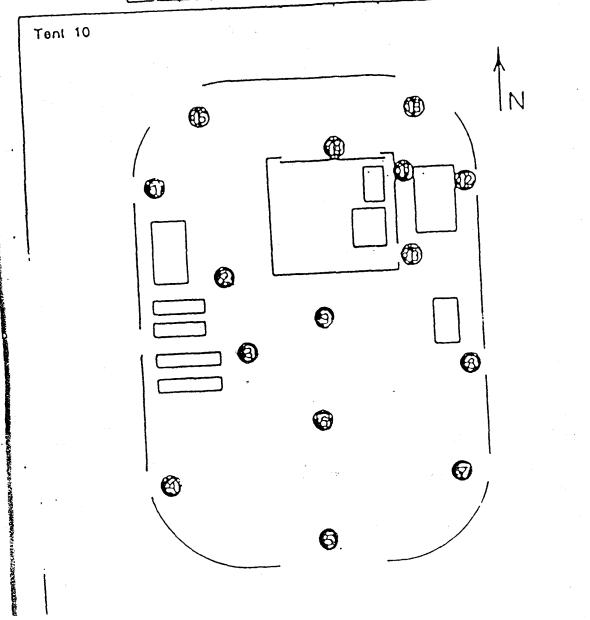
Z			S ENVIRONM	ENTAL TEC	HNOLOG	YSIIE			
	INSTRU	MENT DAT	A						
Mfg.EBERLINE_ Mfg.EBERLI			Mfg.EBERLINE_	Survey Type	CONTAM	INATION			
Model SAC-4 Model SAC-4		SAC-4	Model SAC-4	Building:					
Scrial # <u>824</u> Scrial # <u>795</u> Cal Due <u>3-21-99</u> Cal Due <u>3-16-99</u>		<i>195_</i>	Serial # <u>9/6</u>	Location: TENT 10					
		Cal Due 3-16-99	Purpose: WEEKLY SURVEY						
3kg <i>O.C</i>	Bkg	0.0	Efficiency 25%	_	RWP #:				
Efficiency 33		ncy <u>33%</u>		RWP #:					
MDA <u> </u>		220			_				
				Date://-/	9.98	Time:)		
Mfg.EBERLIN			Mfg.NE.TECH_	- / / /	•	201			
Serial # 888 Serial #									
				Pri	Print name Signature				
Cal Due 7-9		e	Cal Due	_	<u> </u>	· /1-19-48			
3kg. <u>39</u>			Bkg.	RCT:	/	0:			
efficiency 25 MDA <u>200</u>			Efficiency	- Pri	nt name	Signature	Emp		
			MDA						
PRL#:						•			
Comments:									
			SURVEY	RESULTS					
REMO	OVABLE	t Dit	RECT	REMOV	JARI F	ı DIR	FCT		
		1							
44.54	1	1	1				-		
ALPHA	BETA	ALPHA	BETA	ALPHA			BETA_		
		ALPHA		ALPHA			-		
. 40	4200	ALPHA	2	ALPHA 3.			-		
. <u>L</u> 20	4200	ALPHA	2	3			-		
. <u>790</u> . <u>790</u>	1200 1200 1200	ALPHA	2 2 2	3. 4. 5.		1	-		
. <u>120</u> . <u>120</u>	1200 1200 1200 1200	ALPHA	2 2 2 2 2	3. 4. 5.		1	-		
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ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE RADIOLOGICAL SAFETY

Drawing Showing Survey Points

Radiological Operations

Aroa or Equipment Drawing Showing Survey Points





Comments:

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE INSTRUMENT DATA Mfg.EBERLINE_ Mfg.EBERLINE_ Mfg.EBERLINE_ Survey Type: CONTAMINATION Model SAC-4____ Model SAC-4_ Model SAC-4 Building: 904 Scrial # 824 Serial # 795 Serial # 9/6 Location: TENT 10 Cal Due 0.03-16-98 Cal Due 3-16-98 Cal Due 3-21-99 Purpose: WEEKLY SURVEY Bkg. O./ Bkg. 0.0 Bkg. 43 Efficiency 25/2 Efficiency 33% Efficiency 33/0 RWP#: MDA LAO MDA くんつ MDA Ldod Date: 11-23-98 Time: 1030 Mfg.EBERLINE Mfg.NE.TECH___ Mfg.NE.TECH RCT: Munoz Model BC-4 Model ELECTRA Model ELECTRA Serial # 838 Serial # _____ Serial # ____ Signature < Print name Cal Due 1-9-99 Cal Due _____ Cal Due ____ Bkg. 37 Efficiency 25 Bkg. _____ Bkg. RCT: Efficiency Efficiency Print name Signature Emp. # MDA LDOO MDA MDA PRL#:

				SURVEY R	ESULTS			
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6.	120	2200		28	3			
7.	40	1200		29)	·		
8.	220	600	•	30)			
9.	40	4200		31				
10.	120	2200		32	2.			
11.	120	2200		33	3.			
12.	120	4200		4ز		X. X.		
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18.	650	400		40).		7	
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20		- On	,	42				
21.		Plan 11/2	/	43				
22.		/5	19	44				
	Reviewed: /1/3	80 /902 RS St	poetvision: 10	Somor (Jenjak		

Print Name

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

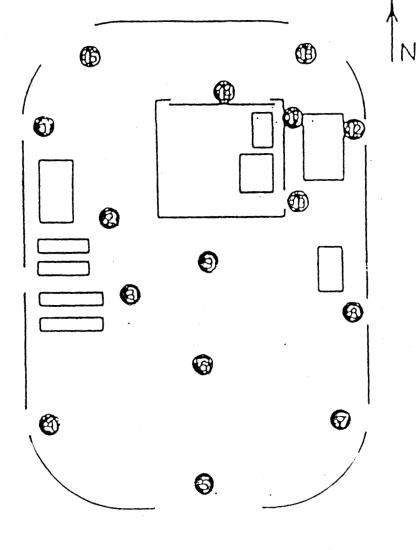
RADIOLOGICAL SAFETY

Drawing Showing Survey Points

Radiological Operations

Area or Equipment Drawing Showing Survey Points

Tent 10



Appendix E.2

Pad 904 Tent 10 RLC Radiological Data



Appendix E.2.1

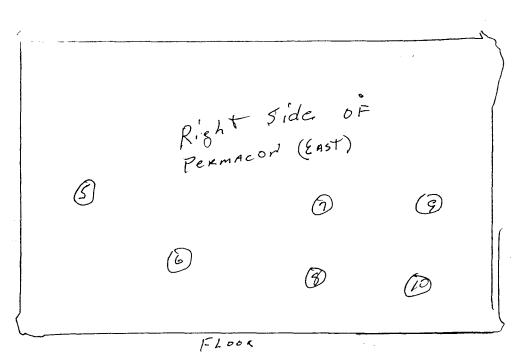
Pad 904 Tent 10 RLC Radiological Data

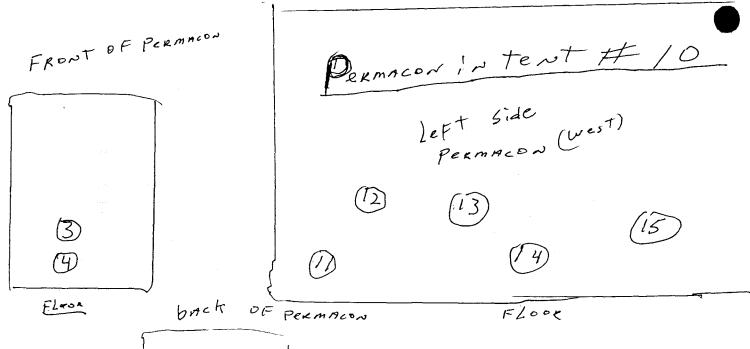
Radiological Surveys



STATES.				10.000					
	ROCK	Y FLAT	S <u>ENVI</u> R	RONM	EN	VAL TECHNOLOGY'S	ישלווא		
	INSRUMEN			******			· · · · · · · · · · · · · · · · · · ·		
Mfg	EbenLine Mfg. Ebenl	Mfg.	Ebent	ميمند	Sur	vey Type: Contain	n +. 0.	<u> </u>	
Model_	SAC-4 Model SAC	<u>-4</u> Mod	el <u>BC-4</u>		Buil	ding: 904 PAd			
	1042 Serial# 79					ation: tent 10			
Cal Du	e/1/45/99 Cal Due/0/			<u>-5</u> 5	Pur	DOSE: FOR WORK	PK-g	TO/0.	0346
BKg.	Bkg. 0.2 cy 33 6 Efficiency 32	BKg.	36	0,	DW	P#: - JH 6-		0	
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-	200	apm mor	1 2004	<u> 2 124</u>	Date	: 6-4-58	Time:	13:3	0
Mfg. 2	Ebeuline Mfg. N.E	te Mfg.			ĺ			<u> </u>	
	13-6-4 Model Elect				RCT	Print name	1 Has		
Serial#	1309/4 Serial# 15	45 Seria	1#			Print name	Sign		
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Bkg.	E 5-9-98 Cal Due //-/ 3 6 0 Bkg. /3547 Cy 25/- Efficiency /33	Bkg.		_		Minoz V	/pe		
MDA	$\begin{array}{ccc} 257 & \text{Efficiency} & 133\\ 2009 & \text{MDA} & 33 \end{array}$	J. J. 6 Effici	ency						"
MDA	ZVO TOM WIDA B 33	6 WIDE	1						
PRL#:	- JH 6-	4-89	3			1			
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			-00						
	OH	6-4	->>			RWP 99.	549-	6087 A	5
				JRVEY	RES	ULTS	,		
Sw	Location/Description	Removab			Swipe	Location/Description	Remov		Total
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7		12027		1 1	1 1				
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Jate Re	eviewed: <u>6-//-99</u>	RS Super	vision:	<u>L</u> A	100	oan 1 Tilo			
				I	Print 1	Name Si	gńature		







back - South FRONT - North

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ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

l i ji n	NSTRUMENT DA	ra ·	
Mfg. EBERLINE	Mfg. EBERLINE	MfgEBERLINE	Survey Type: Contamination Survey
Model <u>BC-4</u>	Model_BC-4	Model SAC-4	Building: Tent 4 10
Serial #838	Serial #874	Serial #959	Location: Pad 904
Cal Due <u>7/13/99</u>	Cal Due <u>6/7/99</u>	Cal Due 7/5/99	Purpose: CHARACTERIZATION SURVEYS
Bkg. <u>41</u>	Bkg38	Bkg	
Efficiency 25%	Efficiency 25%	Efficiency 33%	RWP#: - NA
MDA <200	MDA<200	MDA<20	
			Date: 04-06-99 Time: 1/30
	Mfg. NE TECH		
			RCT: Rox SayOER / Kayol
	Serial # 2343		Print name Signature
Cal Due <u>6/16/99</u>	Cal Due 8-12-99	Cal Due 8-12-99	and the second of the second o
Bkg. <u>0./</u>	Bkg. 9 2	·	RCT: N +
11	Efficiency 22.0%		Print name Signature Emp. #
MDA <20	MDA 43	MDA _32/	
PRL#:			

All Results Are In dpm/100cm2

Comments Exterior Sucuey

SURVEY RESULTS

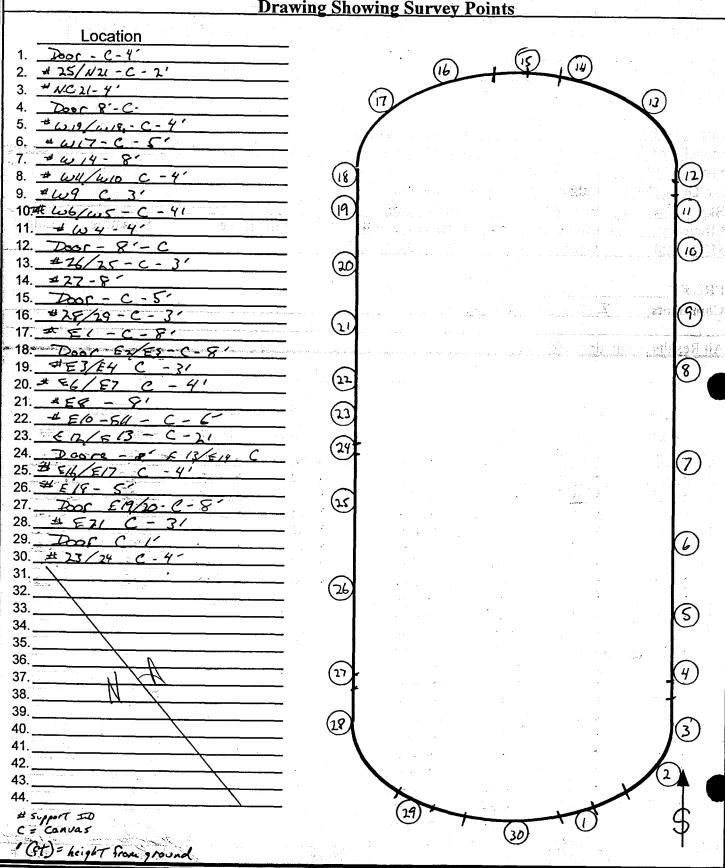
			<u></u>		2.5 		$\sum_{\mathbf{x} \in \mathcal{X}} \sum_{i \in \mathcal{X}} \mathbf{x}_i \mathbf{x}_i \mathbf{x}_i = \sum_{i \in \mathcal{X}} \mathbf{x}_i \mathbf{x}_$
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Alpha	Beta	Alpha	Beta	Alpha	Beta	Alpha	Beta
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t seen to je	aga serase y		to we are a supply meaning	Print Name		Signature	emp.#

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RADIOLOGICAL SAFETY

Drawing Showing Survey Points



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

* INSTRUMENT DATA

Mea EBERTINE	Mfg. EBERLINE	Medererine	Survey Type: Contamination Survey
Model BC-4			
	Model BC-4		Building: TENT # /O
Serial #838			Location: 904 PAD
Cal Due <u>7/13/99</u>	Cal Due <u>6/7/99</u>	Cal Due 7/5/99	Purpose: CHARACTERIZATION SURVEYS
Bkg. 43	Bkg. 41	Bkg. <u>0.6</u>	
Efficiency 25%	Efficiency 25%	Efficiency 33%	RWP #: NA
MDA <200	MDA <200	MDA <20	
	1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2		Date: 04-21-99 Time: /620
Mfg. EBERLINE	Mfg. NE TECH		
Model SAC-4	Model ELECTRA	Model ELECTRA	RCT: Zex SMYDER / RCYLLO
Serial # <u>1188</u>	Serial # 1255	Serial #_/255	Print name Signature
Cal Due <u>6/16/99</u>	Cal Due 9-/6-99	Cal Due <u>6-16-99</u>	
Bkg. O.L	Bkg. 9 3	Bkg. D' 458	IRCT: N /
Efficiency 33%	Efficiency 11.870	Efficiency 31.87.	Print name Signature Emp. #
MDA <20	MDA 51	MDA 306	The state of the s
	* ************************************	75.	
PRL#:			The second secon
Comments Co.	Line - Walls +	Sustama quer	2 meter Survey Points
	1 2 90	Many Thirt	Commence of the Commence of th
All Results Are In	dpm/100cm2		A state of the sta

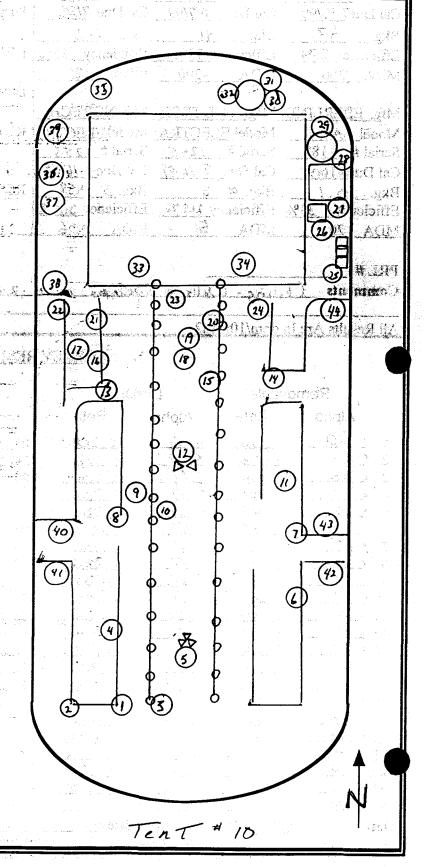
SURVEY RESULTS

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5. < 20 < 700	4 306	27. 4 20 4	200 (5/	4 306
6. 120 (200	4 306	28. 4 20	200 451	4 306
7. <u>420</u> <u>4 20G</u>	. <	29. 4 20 4	200 (51	< 306
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9 (20 (100	451 4 306	31. < እ0 ፈ_	206 (5/	4 306
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12. < 20 < 200	451 4306	34/20 4	200 4 5/	4 306
13. < 20 < ZGG	4 306	35. <u>< 20</u> <	200 < 5/	4 306
14. <u>20 < 200</u>	< 51 < 306	· · · · · ————————————————————————————	200 < 5/	1 306
15. 4 20 4 200	1 51 4 706	37. < 20 <	200 65/	206
16. \(\frac{20}{200} \)	4 306	38. < 20 <	206 55/	<u> 306 </u>
20 4 200	456 4306		200 551	306
19 20 4 200	306		200 55/	4 306
	4 4 4 106	41. <u>4 26 4</u>	200 45/	1 306
20) < 20 4 200	35/ 2706	42. 420 4	200 (51	4 306
21. 20 4 200	4 306	43. 4 20 4	200 451	4 306
22. 4 20 200	· < 51 < 306	44. 4 20 4	200 1451	1 70/
Date <u>4/26/99</u>	RS Supervision:	Cooper 1	Miloope	
	Pri	nt Name	Signature -	and the second second

ROCKY FLATS BNY<mark>IRONWENTAL TÉCHNOL</mark>OGY SIT

RADIOLOGICAL SAFETY Drawing Showing Survey Points

Location
1. Heat Pipe Hood
2. Heat Piac Hoon
13 Light
4. Ignighter
5. Creakers
4. Ignighter 5. Speakers 6. Heat Pipe Hoop 7. Heat Pipe Hoop
7. HERT PIPE HOOD 8. HEGT PIPE HOOD
(9) E6 10'
-10. Brans between 2+64h highT
(11) ELO & CALVAS 20'
12. Speakers
13. Heat HOOD
14. Heat Hono
15. hight on E/2
16. Heat Hook W14 (17) Suggest W13
(17) Support W13 (18) Top Support Beam WB/W14 (19) Tent Convas Vent
(19) Tent Canuas Vent
(2) Causes (2) 15 25°
21. Ignighter 10-14
22. Heater Hoop
23. Conduit stok
(24) Support E17 25'
25 Tap Tent 11 Panel Rox 9'
26. Small Hopper 438-115 8' 27. Big Hopper 438-017 10'
28. Rig Heapen Box Top &
28. Rig Hopper Box Tap 8' 29. Water Tank Tap 6'
30. WAter Shower Leg 6'
31. Lunter Shower Ledge 9"
32 water Shower Stog 10'
33 Top Permacan Rivid. 34 Top Permacan Rivid. 35. Locker Top 36. Locker Top
34 Top Permacan Riveld
36. Locker Top
30. Locker Top
38. Heat Pipe 10'
(39) Support 10'
40. Heat Pipe 10'
41. Heat Pipe 8'
42. Neat Pipe 8
43. Heat Pipe 10
44. Heat Pipe 8'





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*** INSTRUMENT DATA*

		
Model BC-4	Model BC-4	Model SAC-4
Serial #838	Serial # <u>874</u>	Serial #959
Cal Due7/13/99	Cal Due 6/7/99	Cal Due 7/5/99
Bkg. 41	Bkg. 4/	
Efficiency 25%	Efficiency 25%	Efficiency 33%

MDA_<200_ MDA <200 MDA

Mfg. EBERLINE Mfg. NE TECH Mfg. NE TECH Model SAC-4 Model ELECTRA Model ELECTRA Serial # 1188 Serial # /680 Serial # /680 Cal Due<u>6/16/99</u> Cal Due <u>8-10-99</u> Cal Due 8-10-99

Bkg. Bkg. 438 Bkg. 0.1 Efficiency 33% Efficiency 12.9% Efficiency 34.7% MDA 300 MDA <20 **MDA** 63

Mfg. EBERLINE Mfg. EBERLINE MfgEBERLINE Survey Type: Contamination Survey Building: TENT # 10 Location: 904 PAD

Purpose: CHARACTERIZATION SURVEYS

RWP#: NA

Date: 04-29-99 Time: 1500

RCT: Rex SAYDER

N

Print name

Print name

Signature

PRL#:

Comments Floor + Wall Survey

RCT:

Emp. #

All Results Are In dpm/100cm2

SURVEY RESULTS

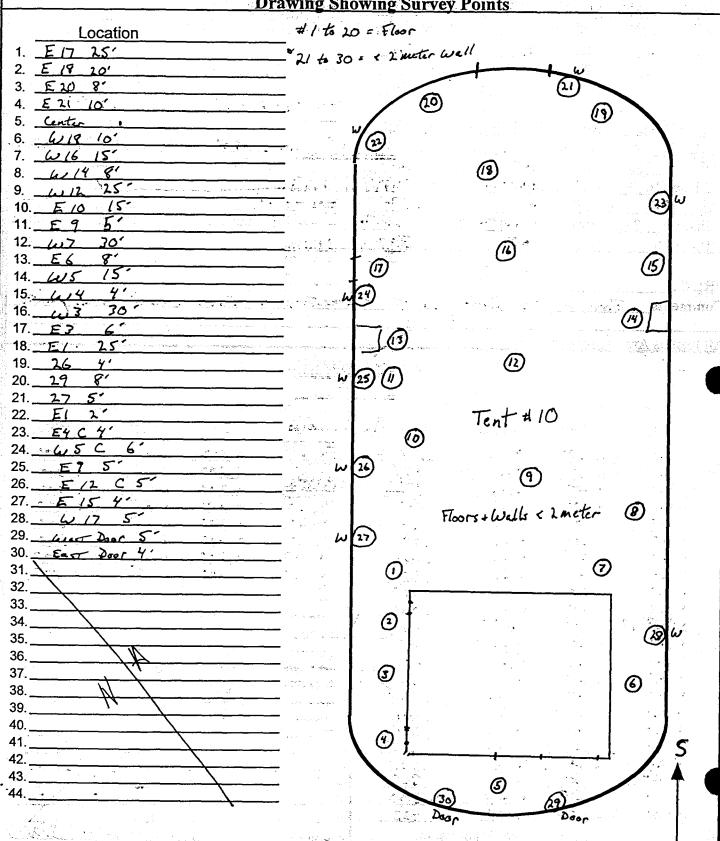
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Remo	ovable	Dire	ct and an	÷ R	emovable	Dire	ect
Alpha	Beta	Alpha	Beta	Alpha	Beta	Alpha	Beta
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3. < 20	₹ 265	< 63	972	25: 4 20	< 1 <u>2</u> 0€	463	× 300
4. 126	4 200	< 63	.360	26. 4 20	₹ 200	163	2 300
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17. < 20	283	< 63	1278	39			<u> </u>
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22. <u>< 2</u>	2,200	<u>(63</u>	- 423	44	<u> </u>	0-1	ì
Date _	4/29/99	RS Supervi		1 Coper	- 1	Moore	`
	Santana are to a social	v	<u>:::::::::::::::::::::::</u>	rint Name		Signature	

ROCKY PLATS ENVIRONVIENTAL TECHNOLOGY ST

RADIOLOGICAL SAFETY

TO A TOWN THE PARTY OF THE PART

Drawing Showing Survey Points



Mfg. EBERLINE Mfg. NE TECH Mfg.NE TECH Model SAC-4 Model ELECTRA Model ELECTRA Serial # 1188 Serial # 1425 Serial # 1425 Serial # 1425 Cal Due6/16/99 Cal Due 8-15-99 Cal Due 8-15-99 Bkg. O 2 Bkg. 5 Bkg. 464 Efficiency 33% Efficiency 21.0% Efficiency 316% MDA 4308

RCT: Rex Supply Signature Emp. #

RCT: N

Print name Signature Emp. #

Signature

PRL#:_____

Comments Walls + Floor < 2 meter Survey Points + equipment
area posted as contamination area". Plus Direct scen at

All Results Are In dpm/100cm2 Survey Paints /m2

SURVEY RESULTS

			- 1,500 - 250,000 - 1,500 - 1,				
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Date	5/10/99	RS Supervision	: LNC	oper	1 Sh	looper	

Print Name

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

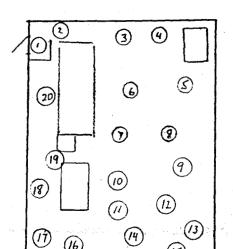
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Tent # 10

Portes:

C.A.

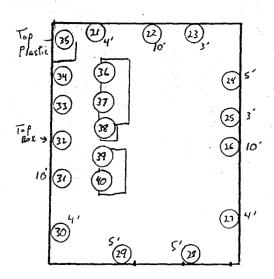
RWA Required



(15)

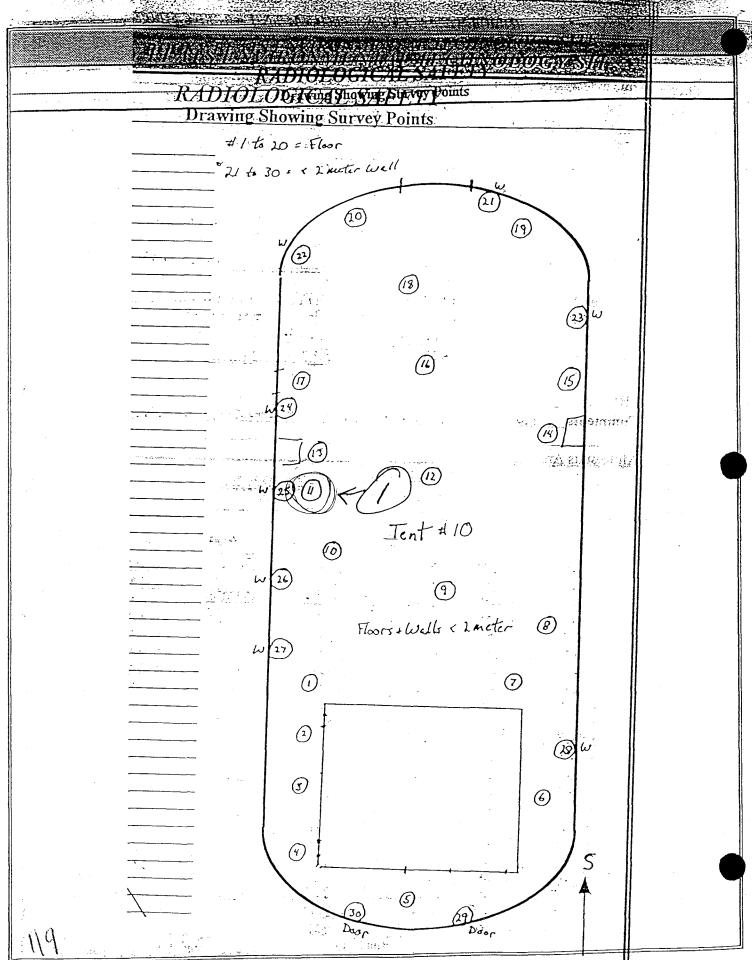
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Floor



Walls + Equipment

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Date Reviewed:	7-27-77	RS Super	vision:	W	Ca	ner /	LO	DOLLA_	2	



Appendix E.1

Pad 904 Tent 10 Historical Radiological Data

Appendix E.1.1

Pad 904 Tent 10 Historical Radiological Data

Radiological Surveys

Appendix E.3

Pad 904 Tent 10 Historical Chemical Data

Appendix E.3.1

Pad 904 Tent 10 Historical Chemical Data

Beryllium

Appendix E.3.1.1

Pad 904 Tent 10 Historical Chemical Data

Beryllium

Chain of Custody

MAY 26 '99 14:34 FR MTC IH LAB

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P.06

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9927574 904-05181999-35-	GSS FILTER			106	1-FILTER WA	NR01A001 (Beryllium Filter Analysis) [Routine]	um Filter Analysis) [Routine]	N/A None
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DISPOSITION									

MAY 26 '99 14:35 FR MTC IH LAB

303 978 3005 TO 93039664555

P.07

Construct Number	Commodor	Commodore Advanced		E H	IAIN O	F CUSTOI	Y/SAMP	AIN OF CUSTODY/SAMPLE ANALYSIS REQUEST Des. 5/28/2	94052110 co	coc.# 99 Z 7574#001	1001
Colored Colo	Scrences								fut.	1 di	EX.
Common Name	UIN 99Z7574			₹0 0	LSON, KARI	Ne		Telephane Ro. 333-956-6370	NEW .	ł	
Section Sect	Bettle Na.	Chelonica	Aleric		Tons	_	NorType Coetain	4	ple Amalysis	Z. Z.	E E
Paris Pari	9977574-	904-05/5/809-35-	FILTER	-		904	S-FILTER NYA		r Analysis) [Routine]	N.A	
Sept-60161898-25- FILTER Sold H-RITER NAN NRO14GO1 (Beryllium Filter Analysis) Routine] NAN NRO14GO1 (Beryllium Filter Analysis) Routine] NAN NAN NRO14GO1 (Beryllium Filter Analysis) Routine] NAN	008.001	8008	·		-	•				None	
September Partier South Falter No.	9927574	904-05/18/399-35-	FILTER			904	1-FILTER NA		r Analysis) [Routine]	NA	
Sept-66181969-355 FILTER SQ4 1-FILTER N/M NRC1A001 (Beryllium Filter Analysis) [Routine] NA NG4-66181969-355 FILTER SQ4 1-FILTER N/M NRC1A001 (Beryllium Filter Analysis) [Routine] NA NG4-66181969-355 FILTER SQ4 1-FILTER N/M NRC1A001 (Beryllium Filter Analysis) [Routine] N/M NG4-66181969-355 FILTER SQ4 1-FILTER N/M NRC1A001 (Beryllium Filter Analysis) [Routine] N/M NG4-66181969-355 FILTER SQ4 1-FILTER N/M NRC1A001 (Beryllium Filter Analysis) [Routine] N/M NG4-66181969-355 FILTER SQ4 1-FILTER N/M NRC1A001 (Beryllium Filter Analysis) [Routine] N/M NG4-66181969-355 FILTER SQ4 1-FILTER N/M NRC1A001 (Beryllium Filter Analysis) [Routine] N/M NG4-66181969-355 FILTER SQ4 1-FILTER N/M NRC1A001 (Beryllium Filter Analysis) [Routine] N/M NG4-66181969-355 FILTER SQ4 1-FILTER N/M NRC1A001 (Beryllium Filter Analysis) [Routine] N/M NG4-66181969-355 FILTER SQ4 1-FILTER N/M NRC1A001 (Beryllium Filter Analysis) [Routine] N/M NG4-66181969-355 FILTER SQ4 1-FILTER N/M NRC1A001 (Beryllium Filter Analysis) [Routine] N/M NG4-661819 NG4-	L00'800						4 FRITED AUX		- And Section (Greenister)	7714	
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1942 1944-161 18166-35 FILTER 1954 1-FILTER N/A NRO1A001 (Beryllium Filter Analysis) [Routine] NNA 1944-161 1869-35 FILTER 1954 1-FILTER N/A NRO1A001 (Beryllium Filter Analysis) [Routine] NNA 1-FILTER N/A NRO1A001 (Beryllium Filter Analysis) [Routine] NA 1-FILTER N/A 1-FILTER N/A NRO1A001 (Beryllium Filter Analysis) [Routine] NA 1-FILTER N/A 1-FILTER N/A NRO1A001 (Beryllium Filter Analysis) [Routine] NA 1-FILTER N/A 1-FILTE	99Z7574- 011.001	904.05181999-35- 011	FICTER			904	1-FILTER NIP		r Analysis) [Routine]	None	
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DOLOGIES 1998-36- FILTER PROJECT	99Z7574	MO4-05/18/1989-35-	FILTER	-		786	1-FILTER W		r Analysis} {Routine]	& Z	
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۰	PINAL SAM	—	(eg. Retim to tuste	weer, per lab pro	cedure, condin.	Troops)		Dapored By		Date/Lime	

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P.08

Commodore Advanced		O	CHAIN 0	F CUSTO	Y/SAMPL.	AIN OF CUSTODY/SAMPLE ANALYSIS REQUEST DOM: Apple		99Z7574#001
Sciences							Page	3 of 3
RIN		0	Contact/Reguestor OLSON, KAREN	N. N.		Telephone No. 3/33-3/66-63 70	MSW FAK	
Borde Na Challonna	N. Brix	2	Tere	Location	No/Type Container	enderny apoung		Preservative; Prediate
200	FILTER		,	8	1-FILTER NA	NRO(A001 (Beryllium Filter Analysis) [Rouline]	sis) [Routine]	Nane
9927574 90446181959-35- 020.001 020	HLTER		,	706	1-FILTER NIA	NR01A001 (Beryllium Filler Analysis) [Routine]	sis) [Routine]	N/A None
9827574- 80405181899-35- 021.001 021	FILTER			POG.	1-FILTER NA	NR01A001 (Beryllium Filter Analysis) [Rouline]	sis) [Rouline]	N/A None
96Z7574- 604-05/81899-35- 022.00% 002	E			7 06	1.FILTER P	IH01C015 (Metals by NiOSH 7300 (Any 1)) {Routline] (Benyllium)	0 (Any 1)) (Roulline)	N.A.
9927574 80405181699-35-	Ξ			208	1-FILTER P	IHO1CO15 (Metals by NIOSH 7300 (Any 1)) (Routine) (Beryllium)	0 (Any 1)) [Routine]	NA NA
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The party of the p		Roseiro	S. B.	Shaloo	Deta Three Reinquished By:	Date/Time	Received By:	DuoTire
Perticograded By:	Desertance	Kennived By	1000 X	? }	DaeTime Relinquicted By:	Deltitoe	Ransived By:	DutoTime
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Reinquinke By:	Detalitate	Received By:	Py:		Date/Time Reinquished By:	DataTank	Received By:	Detra
4	re	amer, per la	b procedure, used	in process)		Disposed By	Destine	

Appendix E.3.1.2

Pad 904 Tent 10 Historical Chemical Data

Beryllium

Sample Locations



on	ft.							not in lenge																			not in compe	
Sample Locations Specification	North/South: 335	Corresponding Random Sample Location Coordinates	() () () () ()) Joseph)	1 x x	(26)	(/&\	, 275) n	(52)	1/2/	(1/3)	1280)	(28)	(70/	168)	(/40 '	161)	, 4)	(191)	3/4)	, 30)	, 707)	、スワン)	323)	126)	93)	, <u>287</u> mc	
Sample Loo	C ft. North/	Correspor Sample Loca	3m	1	(15)	(33	(54	(28)	355	(43	(/ 3	(5/)	(5/	1+))	\(\mathcal{O}\)	(4)	8/)	۷)	4	(53)	(A)	A()	<u>り</u> の	DS)	
	East/West:	Generated Random Numbers EAM N/S	0.569	0.602	0.144	0.078	0.838	0.821	0.156	0.224	0.927	0.835	0.256	0.302	0.500	0.720	0.481	0.011	0.569	0.639	0.389	0.320	0.797	0.965	0.376	0.277	0.857	
113	East	Ger Randon F/M	0.601	0.204	0.248	0.557	0.903	0.470	0.019	0.530	0.719	0.214	0.310	0.857	0.690	0.359	0.041	0.843	0.813	0.303	0.114	0.704	0.977	0.407	0.234	0.597	0.564	
Coordinate Sheet Number:	Room Dimensions:	Sample Number	26	27	101 Cary 28	29	30	31	32	33	34	+ mrsye35	36	37	38	39	40	41	42	43	44	45	46	in rempe 47	48	49	20	
Coordina		Corresponding Random Sample Location Coordinates (East/West, North/South)	()	329)	176 Ind	, 53)	(73/	, 2C	, 233)	(大)	, 129)	, 334) no	(584)	(/2 '	, 137)	J.	, 26-	. 2007	(38)	(/0/)	38)	4	(/ & .	, 320)not	, 767)	, 130)	(37)	
	Room Number:: 10xt 10	Correspon Sample Loca	(-/-)		(43	(50	300)		LO)	91)	(47	64)	(23		34	54	0	44)	7	(58	40))<0	(42	(34	7	7	97)	
on Program		Generated Random Numbers E/W N/S	0.483	0.982	0.825	0.159	0.484	0.060	0.696	0.720	0.384	0.996	0.862	0.183	0.410	0.725	0.641	0.617	0.294	0.301	0.634	0.013	0.241	0.954	0.797	0.389	0.110	
Beryllium Characterization Program	Building Number: 그러 길스	Gene Random E/W	0.193	0.083	0.712	0.834	0.463	0.140	0.945	0.246	0.786	0.820	0.385	0.411	0.571	0.564	0.001	0.739	0.206	0.962	0.402	0.420	969'0	0.573	0.062	0.371	1.000	
Beryllium C	Building Nu	Sample Number		2	က	4	3	9	7	ω	O	10	1-	12	13	4	15	16	17	18	19	20	21	22	23	24	25	

Sample Locations Specification 333 North/South: --- (D) 5,34) **3**(3) Ħ. 0 23 4267 East/West: 39) Room Dimensions: 3 -28, 6, 1 Pent 16 F3) 14, 124 Room Number:: Beryllium Characterization Program Building Number: 404 Pol 820 Sketch of General Room Layout location of doors.] coordinate origin, and approximate • , point (0, 0), North for sketch. Using Coordinate 13 approximate direction of Indicate [Indicating Number:

Sample Locations Specification North/South: 56 ft.	Corresponding Random Sample Location Coordinates (East/West, North/South)		, (,		,						
4 H			<u> </u>					_))	_)				,
 astWest:	enerate om Nur	1 0.736 7 0.744		2 0.174			7 0.371	1 0.248	9 0.742	0 0.621	1 0.375	4 0.058	3 0.966	6 0.765	6 0.198	0 0.034	8 0.758	4 0.541	1 0.248	0 0.361	7 0.868	8 0.687	0 0.001	0 0.329	
#	_	3 0.641 7 0.107		9 0.772			2 0.027	3 0.921	0.859	5 0.360	3 0.491	7 0.554	3 0.663	0.346	0.306	0.930	2 0.788	3 0.124	1 0.061	5 0.650	3 0.887	7 0.108	3 0.390	9 0.960	1
Coordinate Sheet Number: <i>± /o</i> <u>と</u> coハ Room Dimensions:	S N N	26 27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	1
Coordin	Corresponding Random Sample Location Coordinates (East/West, North/South)	$e^{\frac{1}{t}}$	40)	6	· 27)	: 34 ()	. 5分件)	(4)	m	(S)	- 100 -	18			,						,				
Room Number::	Correspon Sample Loca (East/West		9	12))	J M	7	(13	<i>∞</i>			J	J	J)))))	,
rization Program	Generated Random Numbers E/W N/S	0.852	0.708	0.153	0.491	0.616	0.965	0.338	0.048	0.899	0.934	0.333	0.336	0.606	0.565	0.070	0.288	0.691	0.904	0.140	0.428	0.975	0.607	0.469	
Beryllium Characterization Program Building Number: $\overline{\mathcal{VA}\mathcal{A}}_{\mathcal{A}}$		0.771 0.326	0.251	0.880	0.500	0.938	0.038	0.135	0.681	0.549	0.339	0.342	0.806	0.667	0.045	690'0	0.638	0.519	0.192	0.474	0.892	0.920	0.451	0.200	
Berylliun Building	Sample Number	- 0	က	4	3	9	7	∞	တ	10	11	12	13	14	15	16	17	9	19	20	21	22	23	24	מכ

Action and the second

Sample Locations Specification ₩: 50 North/South: Ή. EastWest: 24 $\frac{\int_{\mathcal{O}_1} | \mathcal{H} + \mathcal{H} / C}{\int_{\mathcal{O}_1} | \mathcal{H} \setminus \mathcal{O}_2}$ Room Number:: $\frac{\int_{\mathcal{O}_1} | \mathcal{H} \setminus \mathcal{O}_2}{\int_{\mathcal{O}_1} | \mathcal{H} \setminus \mathcal{O}_2}$ Room Dimensions: 23,24 .⊕ ਜ਼ 19,47 •① (S) 21 (S) 22 (S) 24 · M .00 (C) 86D Beryllium Characterization Program Building Number: 904-92/ ; (D) -**Room Layout** Sketch of General location of doors.] coordinate origin, and approximate point (0, 0), North for sketch, Using Coordinate approximate (5) direction of Indicate [Indicating Number: Sheet

(remark =

M = t + (mean)

Meso Not to Scale

Appendix E.3.1.3

Pad 904 Tent 10 Historical Chemical Data

Beryllium

Laboratory Report

MAY 26 '99 14:33 FR MTC IH LAB

303 978 3005 TO 93039664555

P.Ø2





Johns Manville Corporation 10100 W. Ute Avenue (80127) P.O. Box 625005 Littleton, CO 80102-5005 503 978 2000

COVER PAGE

May 26, 1999

Rocky Flats Environmental Technology Site Mr. Roger Cichorz

P.O. Box 464, Building 881 Golden, CO 80402-0464 Laboratory Report ID:

99052110

Laboratory Name:

JMTC IH Analytical Laboratory

Laboratory Code:

JMANS

Subcontract Number:

800221/800188SX6

RIN:

99Z7574

Requestor:

Karen Olson

P.Q./Charge Code:

NG836900

Dear Mr. Cichorz:

The Johns Manville Technical Center (JMTC) has performed the following analytical services as requested. The results are calculated based upon the information supplied on the submission form. All laboratory data has been filed and are available upon request.

The JMTC IH Analytical Laboratory is accredited by the American Industrial Hygiene Association (AIHA) in the industrial hygiene program (Certificate No. 056) and participates in the AIHA ELPAT program.

If you have any questions, please call (303) 978-2584.

Scope of Work:

Requested	Bottle	Customer	Laboratory	Line Item	Sample
Analysis	Number(s)	Number(s)	ID Number	Code	Matrix
Beryllium	9927574-001.001	904-05181999-35-001	99052110-001	NR01A001	WIPE
Beryllium	9927574-002,001	904-05181999-35-002	99052110-002	NR01A001	WIPE
Beryllium	99Z7574-003.001	904-05181999-35-003	99052110-003	NR01A001	WIPE
Beryllium	99Z7574-004.001	904-05181999-35-004	99052110-004	NROIA001	WIPE
Beryllium	99Z7574-005.001	904-05181999-35-005	99052110-005	NR01A001	WIPE
Beryllium	9927574-006.001	904-05181999-35-006	99052110-006	NR01A001	WIPE
Beryllium	99Z7574-007.001	904-05181999-35-007	99052110-007	NR01A001	WIPE
Beryllium	9927574-008.001	904-05181999-35-008	99052110-008	NR01A001	WIPE
Beryllium	9927574-009.001	904-05181999-35-009	99052110-009	NR01A001	WTPE
Beryllium	9927574-010.001	904-05181999-35-010	99052110-010	NR01A001	WIPE
Beryllium	9927574-011.001	904-05181999-35-011	99052110-011	NR01A001	WIPE
Beryllium	99Z7574-012.001	904-05181999-35-012	99052110-012	NR01A001	WIPE
Beryllium	9927574-013.001	904-05181999-35-013	99052110-013	NR01A001	WIPE
Beryllium	9927574-014.001	904-05181999-35-014	99052110-014	NR01A001	Wipe
Beryllium	9927574-015.001	904-05181999-35-015	99052110-015	NR01A001	WIPE
Beryllium	9927574-016.001	904-05181999-35-016	99052110-016	NR01A001	WIPE
Beryllium	9927574-017.001	904-05181999-35-017	99052110-017	NR01A001	WIFE
Beryllium	9927574-018.001	904-05181999-35-018	99052110-018	NR01A001	WIPE
Beryllium	9927574-019.001	904-05181999-35-019	99032110-019	NR01A001	WIPE
Beryllium	9927574-020.001	904-05181999-35-020	99052110-020	NR01A001	WIPE
Bcryllium	9927574-021.001	904-05181999-35-021	99052110-021	NR01A001	WIPE
Beryllium	9927574-022.001	904-05181999-35-022	99052110-022	1H01C015	AIR
Beryllium	99Z7574-023.001	904-05181999-35-023	99052110-023	TH01C015	AIR



MAY 26 '99 14:33 FR MTC IH LAB

303 978 3005 TO 93039664555

P.03

May 26, 1999

Laboratory Report ID:

99052110

Laboratory Name:

JMTC IH Analytical Laboratory

Laboratory Code:

JMANS

Subcontract Number:

800221/800188SX6

RIN:

9927574

Requestor: P.O./Charge Code: Karen Olson NG836900

Comments: No problems were encountered with sample receiving and sample analyses.

I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy sample package and the computer-readable EDD, as applicable, submitted on diskette or by modern, has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Scott A. Steiner

Industrial Hygiene Project Manager

Date



Appendix E.3.1.4

Pad 904 Tent 10 Historical Chemical Data

Beryllium

Laboratory Data

MAY 26 '99 14:34 FR MTC IH LAB

303 978 3005 TO 93039664555

P.04

May 26, 1999

Laboratory Report ID: 99052110

Laboratory Name:

JMTC IH Analytical Laboratory

Laboratory Code:

JMANS

Subcontract Number:

800221/800188SX6

RIN:

99Z7574

Requestor:

Karen Olson

P.O./Charge Code:

NG836900

QUICK RESULTS SUMMARY

 Line Item Code:
 NR01A001
 Reporting Limit:
 0.1 μg

 Sample Matrix:
 WIPE
 Date Received:
 05/24/99

 Analytical Method:
 OSHA ID-125G
 Date Analyzed:
 05/25/99

Customer	Laboratory	Requested	C	ONCENTRA	TION			Constituent
Number	ID Number	Analysis	Backup	Main	Total	T	Q	ID
904-05181999-35-001	99052110-001	Beryllium			< 0.1 μg	TRI	7	7440-41-7
904-05181999-35-002	99052110-002	Beryllium			< 0.1 pg	TRI	J	7440-41-7
904-05181999-35-003	99052110-003	Beryllium			< 0.1 μg	TR1	J	7440-41-7
904-05181999-35-004	99052110-004	Beryllium			0.4 μg	TRI		7440-41-7
904-05181999-35-005	99052110-005	Beryllium			< 0.1 µg	TRI	1	7440-41-7
904-05181999-35-006	99052110-006	Beryllium			0.3 με	TRI		7440-41-7
904-05181999-35-007	99052110-007	Beryllium			0.2 μg	TRI		7440-41-7
904-05181999-35-008	99052110-008	Beryllium			0,1 μg	TRI		7440-41-7
904-05121999-35-009	99052110-009	Beryllium			0.2 με	TRI		7440-41-7
904-05181999-35-010	99052110-010	Beryllium			< 0.1 µg	TRI	J	7440-41-7
904-05181999-35-011	99052110-011	Beryllium			< 0.1 μg	TRI	7	7440-41-7
904-05181999-35-012	99052110-012	Beryllium			< 0.1 μg	TRI	J	7440-41-7
904-05181999-35-013	99052110-013	Beryllium			< 0.1 µg	TRI	1	7440-41-7
904-05181999-35-014	99052110-014	Beryllium			< 0.1 µg	TRI	1	7440-41-7
904-05181999-35-015	99052110-015	Beryllium			0.2 μg	TRI		7440-41-7
904-05181999-35-016	99052110-016	Beryllium			< 0.1 µg	TRI	3	7440-41-7
904-05181999-35-017	99052110-017	Beryllium			< 0.1 µg	TR1	1	7440-41-7
904-05181999-35-018	99052110-018	Beryllium			< 0.1 μg	TRI	1	7440-41-7
904-05181999-35-019	99052110-019	Beryllium			< 0.1 μg	TRI	U	7440-41-7
904-05181999-35-020	99052110-020	Beryllium			< 0.1 μg	TRI	J	7440-41-7
904-05181999-35-021	99052110-021	Beryllium			< 0.1 µg	TRI	1	7440-41-7



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MAY 26 '99 14:34 FR MTC IH LAB

303 978 3005 TO 93039664555

P.05

May 26, 1999

Laboratory Report ID: 99052110

Laboratory Name: JMT

JMTC IH Analytical Laboratory

Laboratory Code:

JMANS

Subcontract Number:

800221/800188SX6

RIN:

9927574

Requestor:

Karen Olson

P.O./Charge Code:

NG836900

QUICK RESULTS SUMMARY

Line Item Code:	IH01C015	Reporting Limit:	0.01 μg	
Sample Matrix:	AIR	Date Received:	05/24/99	
•	NIOSH 7300	Date Analyzed:	05/25/99	
Analytical Method:	MOSII 7300			

Customer	Laboratory	Requested	Ç	ONCENTRAT	TON			Constituent
Number	ID Number	Analysis	Backup	Main	Total	T	Q	[D
904-05181999-35-022	99052110-022	Beryllium			< 0.01 µg	TR1	U	7440-41-7
904-05181999-35-023		Beryllium			< 0.01 µg	TRI	J	7440-41-7



Be SURFACE SMEAR RESULTS (as summarized from K-H Sitewide Be Program)

	BLDG	×	SAMPLE COORDINATE NUMBER	LOCATION/DESCRIPTION	L = LESS THAN DETECTABLE LIMIT	CONCENTRATION ON FILTER (µq)	ua/100cm²
904-03081999-35-051	904	Tent 10	-	Crate	7	0.1	0.1
904-03081999-35-052	904	Tent 10	2	Asphalt pad	7	0.1	0.1
904-03081999-35-053	904	Tent 10	4	Asphalt pad	7	0.1	0.1
904-03081999-35-054	904	Tent 10	5	Asphalt pad	7	0.1	0.1
904-03081999-35-055	904	Tent 10	9	Crate	7	0.1	0.1
904-03081999-35-056	904	Tent 10	7	Asphalt pad	٦	0.1	0.1
904-03081999-35-057	904	Tent 10	8	Plastic Sheeting	J	0.1	0.1
904-03081999-35-058	904	Tent 10	6	Crate	Г	0.1	0.1
904-03081999-35-059	904	Tent 10	10	Asphalt pad	_	0.1	0.1
904-03081999-35-060	904	Tent 10	12	Asphalt pad	7	0.1	0.1
904-03081999-35-061	904	Tent 10	13	Asphalt pad	7	0.1	0.1
904-03081999-35-062	904	Tent 10	14	Asphalt pad	7	0.1	0.1
904-03081999-35-063	904	Tent 10	15	Asphalt pad		0.1	0.1
904-03081999-35-064	904	Tent 10	16	Crate	٦	0.1	0.1
904-03081999-35-065	904	Tent 10	17	Crate		0.1	0.1
904-03081999-35-066	904	Tent 10	18	Asphalt pad	7	0.1	0.1
904-03081999-35-067	904	Tent 10	19	Asphalt pad	7	0.1	0.1
904-03081999-35-068	904	Tent 10	20	Asphalt pad	L	0.1	0.1
904-03081999-35-069	904	Tent 10	21	Crate	-1	0.1	0.1
904-03081999-35-070	904	Tent 10	23	Asphalt pad	٦	0.1	0.1
904-03081999-35-071	904	Tent 10	24	Asphalt pad	L	0.1	0.1
904-03081999-35-072	904	Tent 10	25	Asphalt pad	7	0.1	0.1
904-03081999-35-073	904	Tent 10	26	Asphalt pad	1	0.1	0.1
904-03081999-35-074	904	Tent 10	27	Crate	7	0.1	0.1
904-03081999-35-075	904	Tent 10	28	Asphalt pad	Т	0.1	0.1
904-03081999-35-076	904	Tent 10	29	Asphalt pad	7	0.1	0.1
904-03081999-35-077	904	Tent 10	30	Asphalt pad	7	0.1	0.1
904-03081999-35-078	904	Tent 10	32	Asphalt pad	٦	0.1	0.1
904-03081999-35-079	904	Tent 10	33	Asphalt pad		0.1	0.1
904-03081999-35-080	904	Tent 10	34	Poly Tank		0.1	0.1
904-03081999-35-081	904	Tent 10	35	Asphalt pad		0.1	0.1
904-03081999-35-082	904	Tent 10	36	Asphalt pad		0.1	0.1

6/18/99

Be SURFACE SMEAR RESULTS (as summarized from K-H Sitewide Be Program)

			SAMPLE COORDINATE		L = LESS THAN DETECTABLE	CONCENTRATION ON	
SAMPLE NUMBER	BLDG	RM	NUMBER	LOCATION/DESCRIPTION	LIMIT	FILTER (µg)	µg/100cm²
904-03081999-35-083	904	Tent 10	37	Asphalt pad		0.1	0.1
904-03081999-35-084	904	Tent 10	38	Asphalt pad	L	0.1	0.1
904-03081999-35-085	904	Tent 10	39	Asphalt pad	L	0.1	0.1
904-03081999-35-086	904	Tent 10	40	Asphalt pad	٦	0.1	0.1
904-03081999-35-087	904	Tent 10	41	Asphalt pad	Γ	0.1	0.1
904-03081999-35-088	904	Tent 10	42	Asphalt pad	Ţ	0.1	0.1
904-03081999-35-089	904	Tent 10	43	Asphalt pad	Г	0.1	0.1
904-03081999-35-090	904	Tent 10	44	Asphalt pad		0.1	0.1
904-03081999-35-091	904	Tent 10	45	Asphalt pad	7	0.1	0.1
904-03081999-35-092	904	Tent 10	46	Asphalt pad	7	0.1	0.1
904-03081999-35-093	904	Tent 10	47	Asphalt pad		0.1	0.1
904-03081999-35-094	904	Tent 10	48	Asphalt pad	Г	0.1	0.1
904-03081999-35-095	904	Tent 10	49	Asphalt pad	7	0.1	0.1
904-05181999-35-001	904 TENT 10	Permacon	1	Cement pump	7	0.1	0.1
904-05181999-35-002	904 TENT 10	Permacon	1	Floor	7	0.1	0.1
904-05181999-35-003	904 TENT 10	Permacon	2	Hopper 438-019	L	0.1	0.1
904-05181999-35-004	904 TENT 10	Permacon	2	Floor		0.4	0.4
904-05181999-35-005	904 TENT 10	Permacon	3	Cement pump	7	0.1	0.1
904-05181999-35-006	904 TENT 10	Permacon	E	Floor		0.3	0.3
904-05181999-35-007	904 TENT 10	Permacon	. • • • • • • • • • • • • • • • • • • •	Flöor		0.2	0.2
904-05181999-35-008	904 TENT 10	Permacon	5	Floor		0.1	0.1
904-05181999-35-009	904 TENT 10	Permacon	9	Floor		0.2	0.2
904-05181999-35-010	904 TENT 10	Permacon	2	Ladder 4th rung from top	L	0.1	0.1
904-05181999-35-011	904 TENT 10	Permacon	7	Ladder bottom rung		0.1	0.1
904-05181999-35-012	904 TENT 10	Permacon	7	Floor		0.1	0.1
904-05181999-35-013	904 TENT 10	Permacon	8	Floor	L	0.1	0.1
904-05181999-35-014	904 TENT 10	Permacon	6	Floor		0.1	0.1
904-05181999-35-015	904 TENT 10	Permacon	10	Floor		0.2	0.2
904-05181999-35-016	904 TENT 10	Permacon	11	Floor	-	0.1	0.1
904-05181999-35-017	904 TENT 10	Permacon	12	Floor		0.1	0.1
904-05181999-35-018	904 TENT 10	Permacon	Selective	Hood 2	_	0.1	0.1
904-05181999-35-019	904 TENT 10	Permacon	Selective	Floor 22,3	L	0.1	0.1
					Commence and Comme		



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271 -6					SAMPLE			CONCENTR	
x™s,				SAMPLE TIME	VOLUME		TOTAL ON	ATION	8 HOUR
BNILDING	SAMPLE NUMBER	PRE FLOW	POST FLOW	MINUTES	LITERS	T = <	FILTER (µg)	(µg/m³)	TWA (µg/m³)
904 pad	904-03081999-35-161	2.63	2.67	107	284	J	0.01	0.04	0.008
	904-03081999-35-162					ļ	0.01	BLANK	
904 pad	904-03081999-35-163	2.61	2.58	163	424		0.01	0.02	0.008
Ö	904-03081999-35-164					T	0.01	BLANK	
904 pad	904-04061999-35-076	2.68	2.71	113	305	٦	0.01	0.03	0.007
<i>y</i> *	904-04061999-35-077					7	0.01	BLANK	
904 pad	904-05181999-35-022	2.57	2.52	33	84	7	0.01	0.1	0.008
	904-05181999-35-023					7	0.01	BLANK	

(Comments)

Appendix E.3.1.5

Pad 904 Tent 10 Historical Chemical Data

Beryllium

Upper Confidence Limits on Beryllium

ı				

nat log	-2.3026	-2.3026	-2.3026	-0.9163	-2.3026	-1.2040	-1.6094	-2.3026	-1.6094	-2.3026	-2.3026	-2.3026	-2.3026	-2.3026	-1.6094	-2.3026	-2.3026	log trans	0.2090	17	1.337	1.337	-2.034	-1.609			6	
Be (ug/100cm2)	0.1	0.1	0.1	4.0	0.1	0.3	0.2	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	normal	0.0076	17	1.337	1.337	0.147	0.2	1.20		20	
Tent 10 Permacon random samp #, description	1, cement pump	1, floor	2, hopper 438-019	2, floor	3, cement pump	3, floor	4, floor	5, floor	6, floor	7, ladder (rung 4 from top)	7, ladder (bottom rung)	7, floor	8, floor	9, floor	10, floor	11, floor	12, floor		variance	# Z	Student's t statistic (0.1) Alpha	Student's t statistic (0.1) Beta	mean	Action Level	90% UCL on mean of lognorm dist ¹	EPA G-4, Appdx C	# of samples for 95% CL	¹ H statistic = 1.32

Appendix D Bldg. 910

Appendix D.1 Bldg. 910 RLC Radiological Data

Appendix D.1.1 Bldg. 910 RLC Radiological Data Radiological Surveys

ROCKY.FLATS.ENVIRONMENTAL TECHNOLOGY.STIF			September 1997 and the september 1997 and the	19 47- 1-1-1-1-1-1		The second second	ne s de nside e ference altre e desc.
Mig. EBERLINE Mig. EBERLI	P.	CKV EL ATC	EMULDON				1 P
Mfg. EBERLINE Mfg. BERLINE Mfg. BERLINE Mfg. BERLINE Mfg. BERLINE Survey Type: Contamination Survey Model BC-4 Model BC-4 Model BC-4 Model BC-4 Model SC-4 Building: 9/C Scrial # 38 Serial # 374 Serial # 959 Location: Decidion: Part Propose CHARACTERIZATION SURVEYS Big. 37 Bkg. 3.9 Bkg. 0.0 Bkg. 0.0 MDA <200				AENTAL TE	CHNOL	OGY SITE (
Model BC-4 Model BC-4 Model SAC-4 Serial # 38 Serial # 374 Serial # 959 Location: Cal Due 67/199 Cal Due				FENNEY		Marthaga -	
Model BC-4 Model BC-4 Sac-4 Serial # 959 Location: Purpose: CHARACTERIZATION SURVEYS Cal Due 17/13/99 Cal Due 67/799 Cal Due 67/799 Cal Due 17/13/99 Cal Due 18/13/99	Mfg. EBERLINE Mfg	EBERLINE M	fgEBERLINE.	Survey Type	Co	Mark Commission Commis	
Serial # 818 Serial # 874 Serial # 959 Cal Due 1/13/99 Cal Due 2/13/99 Cal Due 2/13/94 Cal Due 3/13/94 C	Model BC-4 Mod	del BC-4 M	odel SAC-4	Building			rvey
Cal Due (17/99) Cal Due (17/99) Cal Due (17/99) Purpose: CHARACTERIZATION SURVEYS Bkg. 39 Bkg. 39 Bkg. 0.0 Efficiency 25% Efficiency 25% Efficiency 33% MDA 200 MDA 128% Print name Signature Cal Due(16/99) Cal Due 8:10:97 Cal Due 8:10:97 Serial # 2:2473 Seria	Serial #838 Seri	al# 874 Se	rial # 050	Location:		/	
Bkg. 34	Cal Due //13/99 Cal	Due <u>6/7/9</u> 9 Ca	I Due 7/5/99		RACTEDI7	ATION CITY	CXC
Efficiency 25% Efficiency 25% Efficiency 33% RWP #: A/A MDA 200 MDA 200 MDA 200 Date: 84'-09-99 Time: 500 Mfg. EBERLINE: Mfg. NE TECH Mfg. NE TECH Model ELECTRA Serial # 2749 Serial # 2749 Serial # 2749 Cal Due 8-12-97 Bkg. 9	Bkg. 39 Bkg	39 Bk	(g. (D.))	Tuposo. CITA	ICACTERIZ	ATION SURV	EYS
MDA 200 MDA 200 MDA 20 Date: 64-69-99 Time: 1500 Mfg. EBERLINE: Mfg. NE TECH Mfg.NE TECH Model SAC-4 Model ELECTRA Model ELECTRA Serial # 2747 Serial # 27	Efficiency 25% Efficiency	ciency 25% Ef	ficiency 33%	RWP#	1/1 -		
Mfg. EBERLINE, Mfg. NE TECH Mfg. NE TECH	MDA_<200MD.			KW1 #	707		
Model SAC-4 Model ELECTRA Model ELECTRA Model ELECTRA Model ELECTRA RCT			1 - 3.	Date: 34- 59	2_99	Times 150	7
Model ELECTRA Model ELECTRA Model ELECTRA Serial # 1188 Serial # 2743 Serial # 2743 Print name Signature	Mfg. EBERLINE. Mfg.	NE TECH Mf	g. NÉ TECH				
Cal Due 6/16/99 Cal Due 8:11.97 Cal Due 8:12.97 Removable Cal Due 8:12.97 Refficiency 33% Efficiency 22.0% Efficiency 32.0% Effici	Model_SAC-4 Mod	el ELECTRA Mo	del EL ECTD A	RCT: Par	Causen 1	Polish-	
Cal Due \$1.99 Cal Due \$1.99 Cal Due \$1.299 Bidg. O. I Bkg. \(\tilde{S} \) 3 Bkg. \(\tilde{S} \) 3 Bkg. \(\tilde{S} \) 5 Bkg. \(\tilde{S} \) 6 Bkg. \(** " \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	MI # 7 74 C	Print	name	Sanatura	
Signature Sign	Cal Due <u>6/16/99</u> Cal I	Due 8-12-99 Cal	Due 8-12-99			Signature	
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Model_SAC-4	Model ELECTRA	Model ELECTRA	RCT: Rex Snyota	1 Grade
Serial # 1188	Serial # 2243	Serial # 2343	Print name	Signature Emp.
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Date 4/14	2/99 RS Super		Name	State Moogra Signature

ROCKYTUATSTENYTRÓNYÆNUAÚTŒŒUNOLOGYSIII RADIOLOGICAL SAFETY Drawing Showing Survey Points Building 910 - Basement 0 = Drains Support Survey Paint

148

43

Efficiency 25%

MDA 200 dom



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA Mfg.EBERLINE_ Mfg.EBERLINE_ Mfg.EBERLINE_ Model SAC-4 Model SAC-4 Model SAC-4_ Serial # <u>838</u> Serial # 835 Serial # <u>842</u> Cal Due 6-9-99 Cal Due 7-/3-99 Cal Due 4-26-99 Bkg. <u>44</u> Bkg. 0.2 Efficiency 33% Efficiency 25% Efficiency 33% MDA 20 dem MDA 20 dom MDA 200 dom Mfg.NE.TECH_ Mg.NE.TECH Mfg.EBERLINE Model BC-4 Model ELECTRA_ ModeLELECTRA Serial # _/680 Ser 18 1556 Serial # 874 Cal Due 7-21-99 Cal Due 8-22-99 Cal Due _ \$ -/0-99

Bkg. ___ S Bkg.

MDA <u>57/340</u> MDA <u>67</u>

Efficiency 229 347 Efficiency 23 32.1

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	910			
Location:	Main F	bor		
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RWP #: _	11/2			

Time: 1530

RCT: Hersey	1 Lesser
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RCT: X. HTKINSON	1 XITUHUKWAO
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Date: 4-15-99

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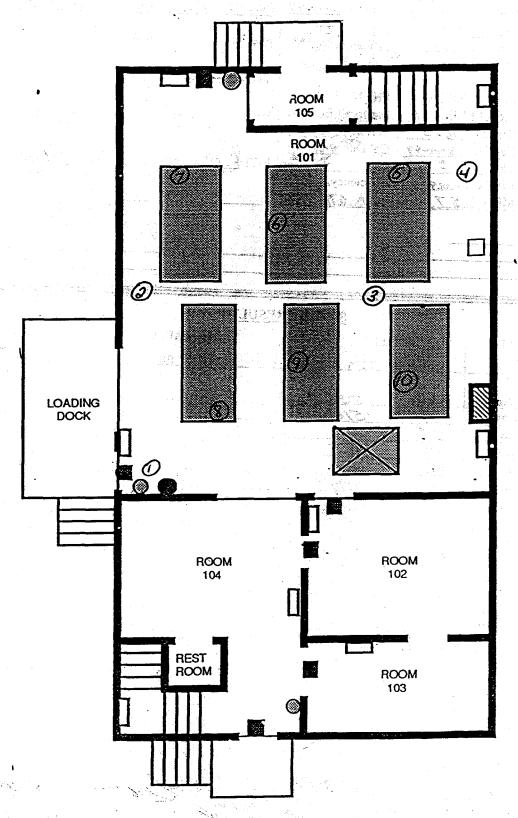
				SURVE		<u>ULTS</u>		***	
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G. E. OSBUHN Date Reviewed: 4-15-99 RS Supervision: Print Name

TROCKY/FILATIS IENY/TRONMENT/AYL-TIEGENOLOGY/SITI

RADIOLOGICAL SAFETY Drawing Showing Survey Points

Building 910 - First Floor





ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA Survey Type: CONTAMINATION Mfg.EBERLINE_ Mfg.EBERLINE_ Mfg.EBERLINE_ Model SAC-Aguary Building: __ Model SAC-4 Model SAC-4 Location: __ Basement Serial # 838 Serial # <u>835</u> Serial # 842 Purpose: Post Lob survey Paint Sampling Cal Due 7-13-99 Cal Due <u>6-9-99</u> Cal Due 4-26-99 Bkg. <u>0.2</u> Bkg. 0.0 Bkg. <u>44</u> RWP #: __ Efficiency 33% Efficiency 25% Efficiency 33% MDA 200 gbm MDA 20dpm MDA <u>20 dom</u> Date: 4-15 99 Time: 1530 Mfg.NE.TECH_ Mfg.EBERLINE Mfg.NE.TECH___ Model ELECTRA_ Model ELECTRA RCT:_ Model BC-4 Print name Serial # 1556 Serial # Serial # <u>874</u> Cal Due 7-21-99 Cal Due _____ Cal Due 9-22-99 TKINSON Bkg. __ Bkg. <u>43</u> Bkg. _ Emp.# Efficiency 22.3 32.1 Efficiency 25% Efficiency ____ MDA MDA 200 dom MDA PRL#:_ Comments: ____

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Date Reviewed: 4-15-99 RS Supervision: G. E. OSBURN

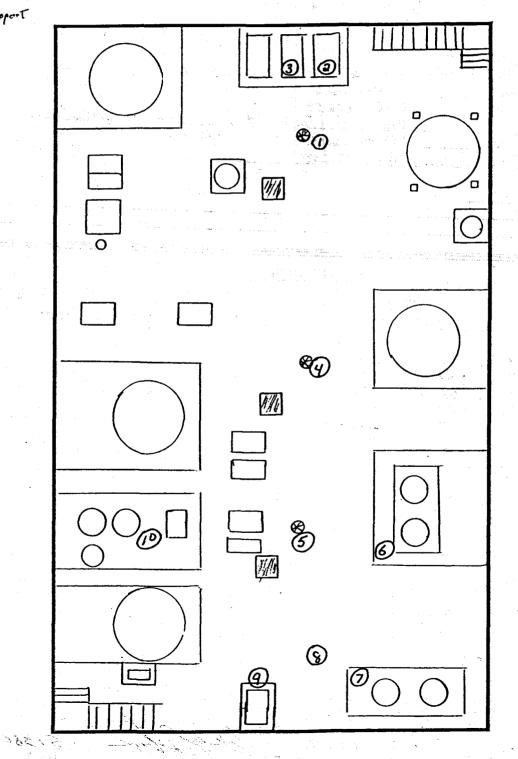
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RADIOLOGICAL SAFETY Drawing Showing Survey Points

Building 910 - Basement

D= Drains

Support



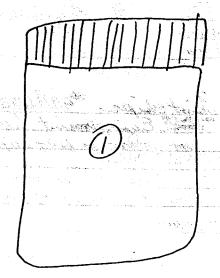


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	lel 8c-4						RC	r. Hannel 1	//0 -00	
	al# 838				1680		1	Print name	Signature	
	Due 7-/3-99							1/20	111	
il	44						RCT	Y. HTKUSONT	4. 1. Hb.	ns
	iency 25%						Ī	Print name	Signature	
	A 200 dpm	MDA 200 6			-		9			
						2 11 8 1			4H155	r i
PRI		92415-99	0		/	2		#	•	
Con	ments444	2- Sumpl	e Ba	ttles	1/1/4	rent (dy	ex #99A6331 Ev	into of	-7033
Do	Hte pois	md 002	€		1.	wast	<u> </u>	instruct blanks	e Chain	e from
	Exterior	of sample	e Via	13 0	n//	<i>NOT</i>	RES	The or paint chip. ULTS	Egilip	ment
	1 ocation/I	Description	Remo	ovable		otal	Swipe		Removable	Total
#		PM/100CM ²	Alpa	Beta	Alpa	T	- #	Results in DPM/100CM ²	Alpa Beta	
1	_		<20			<340	16			
2	Typical	SAMPLE					17			
3							18			
4		:					19			
5							20			
6							21			
7							22			
8							23			
9							24			
10							25			
11							26			
12							27			
13							28			
14							29			
							30			
ate	Reviewed: 4	-15-99	RS Sup	ervisio	on:	6. E. C	SB		Define gnature	

163

ROČKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY Drawing Showing Survey Points





RS FORMS 07.02-01

	ROCKY IFLAITS ENVIRONM	ENTAL TECHNOLOGY SITE
	INSRUMENT DATA	
Mfg. EBERUNE	Mfg. EBERUNE Mfg.	Survey Type: LONTAMINATION
	Model Bc-4 Model 4-70	Building: 910
Serial#_B24		Location: OUTSIDE WALLS OF RW.
al Due 10-13-99	Cal Due 7-/3-99 Cal Due	Purpose: COLLECT PAINT SAMPLES ON OUTSIDE OF E
"8kg. 0.0	Bkg. 40 Bkg.	
Efficiency <u>·33</u>	Efficiency ,25 Efficiency	RWP #: 99-991-0044
MDA <u>26</u>	MDA 200 MDA	
	•	Date: 4-20-99 Time: 1530
Mfg. EBEPUNE	Mfg. BERLINE Mfg. NE TECH	1000110
Model SAC-4	Model BC-4 Model ELECTRA	RCT: KENT 3, STOUAK KIT STOWN
Serial# 842	Serial# 874 Serial# 1680	Print name Signature
Cal Due <u>6-9-99</u>	Cal Due 10-7-95 Cal Due 8-10-99	
Bkg. Ol	Bkg. 41 Bkg.4.0 \$ 526	RCT: / /
fficiency <u>·33</u>	Efficiency 25 Efficiency 22.7 \$ 34.7	Print name Signature Emp. #
MDA 20	MDA 200 MDA 52/315	
		5/ /
PRL#: WA		
Comments:	EXTERIOR WALL SURVEY PO	INTS ONLY, CODY
· ·		

			SU	IRVEY	RES	ULTS					
Location/Description	Rem	ovable	T	otal	Swipe	Location/Des	cription	Rem	ovable	Т	otal
Results in DPM/100CM ²	Alpa	Beta	Alpa	Beta	#	Results in DPM	/100CM ²	Alpa	Beta	Alpa	Веца
LOC. 41 (DEE MAP) PRE	420	₹250	452	4312	16		POST	120	< 200	<52	<315
POST	420	1200	<52	1315	17	Loc, 97 9	PRE	400	1000	∢ 52	<315
Loc, #2 PRE	420	< Z00	452	K31 S	18		POST	200	(200	< 52	2315
PosT	420	1200	<52	4315	19	Loe. #10	PRE	120	1200	452	<315
Loc. #3 PRE	(20	<200	452	< 315	20		POST	120	1200	(sa	218>
POST	620	6200	452	4315	21						
LOC. #74 PRE	<20	1200	152	<315	22						
POST	420	<200	4 52	4315	23						
LOC. #5 PEE	420	L 200	452	<3 <i>L</i> 5	24		1				
POST	420	Lz00	45 2	4315	25		4	Ġ.			
LOC. #6 PRE	420	L200	< 52	<315	26		~7	120			
	L20	Lzeo	452	4315	27						
	Results in DPM/100CM ² Loc. #1 (SEE MAP) PRE POST Loc. #2 PRE POST Loc. #3 PRE POST Loc. #44 PRE POST Loc. #5 PRE POST	Results in DPM/100CM ² LOC. #1 (SEE MAP) PRE	Results in DPM/100CM ² LOC. #1 (SEE MAP) PRE	Location/Description Removable The Results in DPM/100CM2 Alpa Beta Alpa Loc. #1 (SEE MAP) 420 (200 (52	Location/Description Removable Total Results in DPM/100CM2 Alpa Beta Alpa Beta Loc. #1 (SEE MAP) 420 (260 452 4315 POST 420 (260 452 4315 Loc. #2 PRE 420 (260 452 4315 POST 420 (260 452 4315 Loc. #3 PRE 420 (260 452 4315 Loc. #4 PRE 420 (260 452 4315 Loc. #4 PRE 420 (260 452 4315 Loc. #5 PRE 420 (260 452 4315 Loc. #5 PRE 420 (260 452 4315 Loc. #6 PRE 420 (420 452 4315 Loc. #6 PRE 420 (Location/Description Removable Total Swipe Results in DPM/100CM2 Alpa Beta Alpa Beta # Loc. #1 (SEE MAP) 420 (250 (452 (315 16 16 16 16 16 16 16 16 16 16 16 16 16	Results in DPM/100CM ² LOC. #1 (SEE MAP) PRE 420 (200 452 4315 16 POST 420 (200 452 4315 17 LOC, #9 LOC. #2 PRE 420 (200 452 4315 17 LOC, #9 LOC. #3 PRE 420 (200 452 4315 19 LOC, #10 LOC. #3 PRE 420 (200 452 4315 20 ROST 420 (200 452 4315 21 LOC. #4 PRE 420 (200 452 4315 22 POST 420 (200 452 4315 23 LOC. #5 PRE 420 (200 452 4315 23 LOC. #5 PRE 420 (200 452 4315 23 LOC. #5 PRE 420 (200 452 4315 25 LOC. #6 PRE 420 (200 452 4315 25 LOC. #6 PRE 420 (200 452 4315 25	Location/Description Removable Total Swipe Location/Description Results in DPM/100CM2 Alpa Beta Alpa Beta # Results in DPM/100CM2	Location/Description Removable Total Swipe Location/Description Removable Alpa Beta Alpa Beta # Results in DPM/100CM2 Alpa Alpa Beta Alpa Beta # Results in DPM/100CM2 Alpa Alpa Alpa Beta Alpa Beta # Results in DPM/100CM2 Alpa Alpa Loc. # Pre	Location/Description Removable Total Swipe Location/Description Removable Results in DPM/100CM2 Alpa Beta Alpa Beta H Results in DPM/100CM2 Alpa Beta Alpa Beta Alpa Beta H Results in DPM/100CM2 Alpa Beta Alpa Beta Alpa Beta Alpa Beta Alpa Beta Alpa Alpa Beta Alpa Alpa Beta Alpa Alpa Alpa Beta Alpa Alpa Alpa Beta Alpa Alpa Alpa Beta Alpa Alpa Beta Alpa Alpa Alpa Beta Alpa Alpa Alpa Beta Alpa Alpa Alpa Beta Alpa Alpa Alpa Alpa Alpa Beta Alpa Al	Location/Description Removable Total Swipe Location/Description Removable Total Alpa Beta Alpa Beta # Results in DPM/100CM2 Alpa Beta Alpa Alpa Beta Alpa Alpa Beta Alpa Co. #1 (SEE MAP) C20 C200 C52 C315 16 Post C20 C200 C52 C315 C0. #7 PRE C20 C200 C52 C315 C0. #7 PRE C20 C200 C52 C315 C0. #7 PRE C20 C200 C52 C315 C0. #10 PRE C20 C200 C52 C315 C10 C200 C32 C315 C21 C200 C32 C315 C21 C200 C32 C315 C21 C200 C32 C315 C21 C300 C32 C315 C21 C300 C32 C315 C

400. #8 PRE	420	1200	152	<3/5	30					
ate Reviewed: 4/2//99	RS Su	pervisi	on:	LNI	00	ner	1 2	North	Ulgo	re
	- 			I	Print	Name		/Si	gnature	,

KS2

1315

4315

13 LOC. #7

PRE

POST

220

Kzo

6200

K200

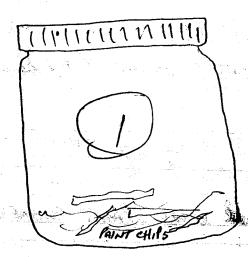
RS FORMS 07.02-01 ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE RADIOLOGICAL SAFETY Drawing Showing Survey Points

1000			6.790 P.	V SIMPLEY		OSCIONAL NA	SIES E			garden komik	19	· C. 3.	<u> </u>
		ROCK	Ý 11/11/2	ATS D	NVU	RONW	(BN)	TALL TIEC	INOLOGY.	SIILE			
		INSRUME			i salah sa		- Y		The second secon				
		UNE Mfg. EBERL		Mfg.	:				CONTAMIN	ATION			
11	del <u>Sac</u> al# &			Model_	·	+			910	1 <			-
	Due 10-1			Serial#_ Cal Due		/			EKIOL WAL		LEVET)	
	. 0.0	Bkg. 0,1	E	Skg.	/		1	ONT	uas waa	<u> </u>	2742		
	iency _			Efficiency	y /9	<u> </u>	RW	P#: 99 -	-991 -0044	!			
MD	A <u>20</u>	MDA <u>20</u>	N	MDA ,	14				90				
Mfa	- = 0 ~ A) 	۸ 'سیدی	160	14		Date	: 4-20-	<u>//</u>	Time:	154	15	
		uwe Mfg. <u>EBERU</u> W Model BC		Aodel /	/		RCI	VEIT	J. STOVAL	V	LOK	<i>} /i</i>	
		38 Serial# 87		Serial#				Print			nature	oney	
		13-99 Cal Due 6-7	7-99 (Cal Dyle									•
_	·			3kg		 .	RCT						
∴ttic "MD,	-	.25 Efficiency <u>.6</u> .00 MDA 20		ifficiency 1DA	′ —			Print	name	Sigi	nature	ŀ	Emp. #
.,,,,,,,,		WDA ACO	<i>O</i> 1v										
PRI	.#:	·											
-	iments:	SAMPLE E	BOTTLE	<u> </u>	FROM	ν	Ex.	TERIOR !	wau, PA	MI	SAM	PLES	<u>,</u>
	Brp.	910											
. —					Sī	RVEY	RES	ULTS					
рс	Lo	ocation/Description	Rem	ovable	1	otal	Swipe		/Description	Rem	ovable	Tc	otai
#		ults in DPM/100CM ²	Alpa	Beta	Alpa	Beta	#		DPM/100CM ²	Alpa	Beta	Alpa	Beta
1	99A1	0331-031,001	420	4200			16	99A638	31-007.002	∠ 20	1200		
2	"	.002	ì	4200			17	\	-008.001		6200		
3	/	- 001,001		6700	4.		18		-008,002	T .	1200		
4	-	_001.002	120	L200			19		-009,001	220	1200		
5		~00Z.001		<200			20		-009,002	120	1200		
	7	-002,002	3	4200)		420	1200		
6			£20	4200			21		-010,001	 	4200		
7	- 	-003.001		L 200			22	· ·	-010.002		-1400		
8		-003,002	420	(200			23	$\overline{}$					
9		-004,001	420	2200			24						
10		-004,002	420				25						
11		-DOS,001	< 20	< 200			26			2			
12		-005,002	120	Liooph	ys.		27		Kg	0,9	*ts		
13		-006, 001	620	L 200			28	400	~~~	<u> </u>			
14		-006.002	420	1200			29						
4.3	*	- 007 . 001		2200			30						
		. 1 1		ervisio		1311			1	nl	-		
ate	Review	ed: $\frac{4}{21/99}$	RS Sup	ervisio	n: <u> </u>	N	Dope	<u> </u>	1 Velly	/Ut	oper	/ E.	mn # II
						ŀ	rint N	ame	Si	gnature			mp. #

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE INSTRUMENT DATA Mfg. EBERLINE Mfg. EBERLINE MfgEBERLINE Survey Type: Contamination Survey Model BC-4 Model SAC-4 Building: Serial # 959 Location: Cal Due 7/13/99 Cal Due 6/7/99 Cal Due 7/5/99 Purpose: CHARACTERIZATION SURVEYS Bkg. 45 Bkg. 40 Bkg. Efficiency 25% Efficiency 25% Efficiency 33% RWP #: - //A -MDA <200 MDA <200 MDA <20 Date: 04-22-99 Time: 1600 Mfg. EBERLINE Mfg. NE TECH Mfg. NE TECH Model SAC-4 Model ELECTRA Model ELECTRA Serial # 1188 Serial # /680 Serial # /680 Print name Signature Cal Due 6/16/99 Cal Due 8-10-99 Cal Due 8-10-99 Bkg. 0.1 Bkg. 9 5 Bkg. 8' 5/2 RCT: Efficiency 33% Efficiency 22.9% Efficiency 31.7% Print name Signature Emp. # MDA <20 MDA 59MDA 323 PRL#: Comments Survey Points floor + walls & 2 meter + Zuilding Systems & 2 meters Plus Direct Scan of Points 1m2 All Results Are In dpm/100cm2.

SURVEY RESULTS

Removable	Dire	ect	Rem	ovable	Dire	ect .
Alpha Beta	Alpha	Beta	Alpho	Beta	Alpha	Beta
1. <u>< 20</u> <u> </u>	< 59	1014	18523. < 20	< 200 < 300	< 59 < 59	< 323
2. < 20 < 200	< 59	834 C		< 200	<u> </u>	<u>//07</u> < 323
3. <u>< 200</u> 4 200	× 59	378	25. < 20	< 200°	< 5 7	1278
4. < 20 < 200	<u> < 59</u>	897	26. < 20	4 200	< 59	<u> </u>
5. < 20 < 200	< 59	732	27. < 20	< 200	< 59	₹ 323
6. 4 20 4 200 7 4 20 4 200	< 59	885	(28. 120	< 100	< 59	12 378
200	<u> < 57</u>	-24/ Fl	r≥29. <u>< 20</u>	< 200	< 5 ⁷	< 323
	× 59	942 cv	√ 30. <u>< 20</u>	< 2∞	×59	594
9. <u>120</u> <u>10.6</u>	· <u>< 59</u>	847	31. 4 20	< 20G	< 59	507
	<u> </u>	_7.29	32. < 20	< 200	< 59	402
12. \ 20 \ \ 200	< 59	-633	33. < 10	£ 208	< 59	< 323
13.4 20 1208	<u> </u>	<u> 705</u>	34. < 13	203	_66	×327
14. 4 20 4 200	<u> </u>	894	35	7 700	<u> < 59</u>	< 323
15 < 20 < 200	< 59	972	36. < 20 37 < 20	< <u>200</u>	< 59	<u> 7323</u>
16. 4 20 4 700	< 59	8/6	91.	200	< 59	< 323
17. 20 (200	< 59	<u> 1128</u> _816	38. < 20	< 200	× 59	< 323
18. 4 20 4,200	- 59	639	39	< 200	< 59	< 323
19. 4 20 4 200	× 59	423		200	< 59	< 323
20. 4. 20 4 200	× 59	1080	41. < 28	\$ 200	× 59	× 323
21. 4 20 < 200	< 59	762	43. < 20	< 700 < 700	< 59 < 59	x 323
22. 20 < 200	< 59	1116	44. < 20	4 200	37	< 323
Date 4/26/99	RS Supervi		Corper		× 3/2 =	1 323
159	the controlled and company of the controlled		int Name	· Mel	Signature Signature	

Contamination Survey

Signature

Signature

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE INSTRUMENT DATA Mfg EREDI DIE MG

Survey Type:

RWP #: - NA -

Building:

MIR. EDEKTINE	_MIG EBEKLINE	MIGEBERLINE
Model BC-4		Model SAC-4
Serial #838		Serial # 959
Cal Due <u>7/13/99</u>	Cal Due 6/7/99	Cal Due 7/5/99
Bkg. 46	Bkg38	Bkg. O.4
Efficiency 25%	Efficiency 25%	Efficiency 33%
MDA_<200	MDA_<200	MDA <20

Location: Purpose: CHARACTERIZATION SURVEYS

910

Mfg. EBERLINE Mfg. NE TECH Mfg. NE TECH Model SAC-4 Model ELECTRA Model ELECTRA Serial # 1188 Serial # /682 Serial # /682 Cal Due6/16/99 Cal Due 8-12-99 Cal Due 8-12-99 Bkg. 0.1 Bkg. 9 2 Bkg. 8 461 Efficiency 33% Efficiency 22.3% Efficiency 31.1% MDA <20 MDA 43 MDA 307

RCT: RCX SNUDER 1

Date: <u>04-23-99</u> Time: /430

RCT: Print name

Emp.#

PRL#:

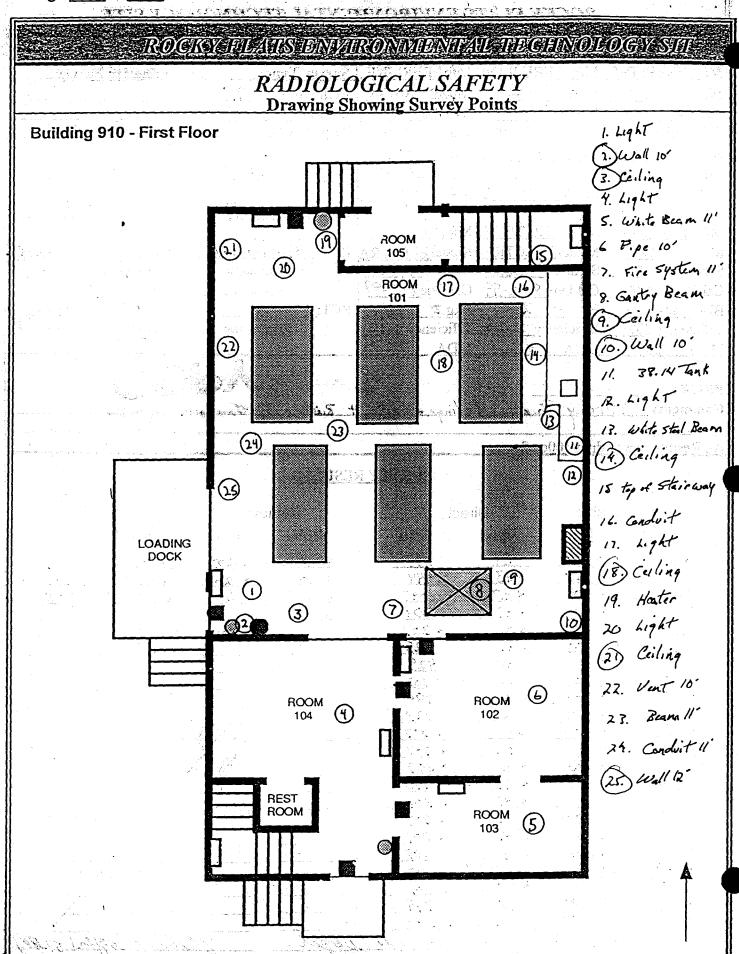
Same and

Comments Survey Points = Ceilings + walls + Rubling Systems

All Results Are In dpm/100cm2•

SURVEY RESULTS

11	: *						
11	Removable	Dire	ect	Rem	ovable	Dire	ct
Alph	a Beta	Alpha	Beta	Alpha	Beta	Alpha	Beta
1. <u>< 20</u> 2. < 20	<u> </u>	<u>54</u> < 43	<u> </u>	23. <u>< 20</u> 24. <u>< 20</u>	< 200 < 200	< 43 < 43	< 307 < 307
3. < 20 4. < 20	<u> </u>	< 43 < 43	1047 804	25. <u>< 2</u> 6	4 200	< 43	525
5. <u>∠20</u> 6. <u>∠20</u>	< 200	< 43	< 307	26			
7. 4 20	<u> </u>	< 43 < 43	<u>525</u> 429	28			
8. < <u>zo</u> 9. < <u>zo</u>	- < 200	<u>-66</u> -43	< 307	30.	\		
10. < 20	< 708	60	_7 <u>86</u> _723_	31 32	7		
11. <u>10</u> 12. <u>20</u>	<u>₹ 208</u> ₹ 208	<u> </u>	<u>< 307</u> < 307	33			
13.4 <u>20</u> 14.4 <u>70</u>	< 200 < 200	< 43 < 43	4 307	35	#7,		
15. 1 20	5 200	< 43	<u>990</u>	36 37			
16. <u>< 20</u> 17. <u>< 20</u>	< 200	< 43 < 43	<u> </u>	38			
18. <u>20</u> 19. <i>20</i>	< 200 Z00	< 47 < 47	687	40			
20. 1 20 21. 1 20	< 200	× 43	< 307 < 307	41 42			\
22. < 20	< 200 < 200	<u>48</u> <u>47</u>	<u> 744</u> 1 307	43			7
Date	4/26/99	RS Supervi	ision: ZN	Cooper	1 / Kl	the plan	re
and the second second second second	Barrier (1990) - Colored grade	Market State State of the state of the	Pr.	int Name	S	ignature U	





ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE INSTRUMENT DATA. Mfg. EBERLINE Mfg. EBERLINE MfgEBERLINE Survey Type: Contamination Survey Model BC-4 9/1 Model BC-4 Model SAC-4 Building: Serial # 874 Serial # 959 Location: Serial # 838 Purpose: CHARACTERIZATION SURVEYS Cal Due7/13/99 Cal Due 6/7/99 Cal Due 7/5/99 Bkg. 34 43 Bkg. Bkg. 0.1 Efficiency 25% Efficiency 25% Efficiency 33% RWP#: ~ /VA-MDA <200 MDA <200 MDA <20 Date: 04-26-99 Time: 1400 Mfg. EBERLINE Mfg. NE TECH Mfg. NE TECH Model SAC-4 Model ELECTRA Model ELECTRA RCT: Per ShyDER / Serial # 1188 Serial # 2344 Serial # 2344 Print name Emp. # Cal Due6/16/99 Cal Due 8-2-99 Cal Due 8-2-99 Bkg. 0.3 Bkg. 9 5 Bkg. 3' 519 RCT: Efficiency 33% Efficiency 21.0% Efficiency 32.5% Print name Signature Emp. # MDA <20 MDA 60 MDA 325 PRL#: Comments Cirlings walls + building systems > 2 meter All Results Are In dpm/100cm2• SURVEY RESULTS Removable Direct Direct Removable Alpha ... Beta Alpha Beta Alpha Beta Alpha Beta < 60 < 325 < 200 2 60 633 23 < 20 عدک 4 200 200 x 60 < 325 24 4 20 < 325 78 **ک** کو 200 < 60 <-325· 501 25. < 20 < 60 200 538 < 60 · < 325 200 <u>صر</u> ۲ (* 1200 · < 60 720-< 20 5 200 < 60 <u>< 325</u> 20 1 200 < 60 < 325 1 20 < 60 200 468 10. 720 200 < 60 372 11.4 20 ∞ < 60 < 325 12. 4 20 200 < 60 666 13 4 20 205 < 60 · < 225 14. 4 20 90 < 280 < 325 15.4 20 < 40 < 325 < 200 **3**7. 16. 4 20 < 60 < 2003 366 17. < રવ < 60 < 325 18.4 20 1 200 < 40 _50/_ 19. < 20 < 60 4200 83/ 20, 4 20 200 460 420 42. 21.4 20 200 460 50/ 43. 200 < 60 450 44.

RS Supervision: [NCooper-

4/29/99

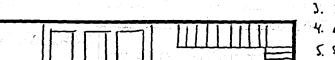
RADIOLOGICAL SAFETY Drawing Showing Survey Points

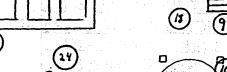
Building 910 - Basement

W,

0 = Drains

Support







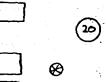


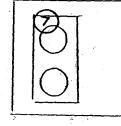


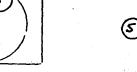
















> 1 meter

1. 450-17A 10"

2. DS3 11

4. Light

5. Steamline

(Dwill 12"

7. 450-20A 10

9. ITB: 621 8'

10. D-7 10'

11 010

12 D-138'

13. RFO Line 106

14. A-Precont 16"

15. Pipe 91

16. D-55 8'

636-16 10'

18. Light

21. Pipe 12'

24. Light

25. Ape



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A CONTRACTOR OF THE PROPERTY AND ADDRESS OF THE PROPERTY ADDRESS OF THE PROPERTY AND ADDRESS OF THE PROPERTY ADDRESS OF THE PROPERTY ADDRESS OF THE PROPERTY ADDRESS OF THE PROPERTY ADDRESS OF THE PROPERTY ADDRESS OF THE PROPERTY ADDRESS OF THE PROPERTY ADDRESS OF THE PROPERTY ADDRESS OF THE PROPERTY ADDRESS OF THE PROPERTY ADDRESS OF THE PROPERTY ADDRESS OF THE PROPERTY ADDRESS OF THE PROPERTY ADDRESS OF THE PROPERTY ADDRESS OF THE PROPERTY ADDRE	e de la companya de l	MENT DAT					1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -
minter of Lore manifestations and fundament	eren. Harrimania antikon eren eren antikon al-			_			
14				IE Survey Typ		ontamination	Survey
Model BC-4							
Serial # 838						77 4 TYONI OLI	
Cal Due <u>7/13/99</u>				9 Purpose: CH	AKACIEKI	ZATION SUF	CVEYS
Bkg. 43	- ~						
11				6 RWP #:	-IVA		
MDA_<200	_ MDA_	<200	MDA <20_	— 	. 09	T: // #/	•
MG CDEDIAN	E Me-	VE TECH 1	AC. NIE TECT		6.41	_ Time:_/ <u>/</u> _/	
Mfg. EBERLIN Modēl SAC-4						~ 1.0	
Serial # 1188			Model ELECT		nt name	Signatur	<u>-</u>
Cal Due <u>6/16/99</u>					it name	Signatur	
Bkg. 0.3	- -			RCT: A		+	}
Efficiency 33%			Efficiency 32.6		nt name	Signatur	e Emp. #
MDA <20		•	MDA 325		ic marrio		Dinp: w
					₹		
PRL#:							
Comments	Sugar	Part	Flace +	Ulalle < 2m	icter +	Scan METER 2	- all mints
- }	<u> </u>	T GIN L.S.	TOOLS T	<u>~ыр</u>			
All Results Are I	n dpm/100	cm2•				Jan. 1	
1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -			Cribrio	ý prom vo		.0 .	• • • • • • • • • • • • • • • • • • • •
			SURVE	Y RESULTS			
Remo	vable	Dire	ect	Rem	ovable	Direc	:t
Alpha	Beta	Alpha	Beta	Alpha	Beta	Alpha	Beta
1. ≤ 20_	< 28B	< 60	852	23. < 20	< 200	1.60	450
2. 20_	4 208	1 60	1035	24. 4 20	< 208	< 60_	528
3. 4 Zo	4_700	5 60	740	25. < 20	⁴ 200	< 60	504
4. < 20	<u> 2000 </u>	(60	967	26. < 20	< 200	1 60	672
5. 20_	, 200	(60	828	27. <u>20</u>	1 200	4 60	480
6. 4. 20	700	1 60	933	28. 4 20	1 200	< 60	564
7. 4.20	200	60	864	29. 20	1 200	4 60	558
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10. 4 70	200	60	907	32.			
11. (20)	208	360	_870_	33			
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13. <u>4. 20</u> 14. <u>4. 20</u>	208	< 60-	_807_	35	/	V	
15. 4 26	7.00	4 60	877	36	——	1	
16. 4 20	< 200_	4 60	909	37	$\overline{}$	\	
17.1 20	200	₹ 60	<u>900</u> 975	38	14	\	
18. 4 20	203	4.60	150	39	14:		
19.4 26	200	< 60	_113	40 41	 		
20. 4 26	× 203	(60	552	42			·
	208	< 60	< ?><	42	 		

44.

RS Supervision: / N (organ

(1)

ROCKYTEZYTS ENYTRONMENTALTECHNOLOGY SYT RADIOLOGICAL SAFETY
Drawing Showing Survey Points Building 910 - Basement 0 = Drains - Support (6) (23 3 4 3 (22 6 Floors + Walls < 2 meter

Print Name

Emp. #

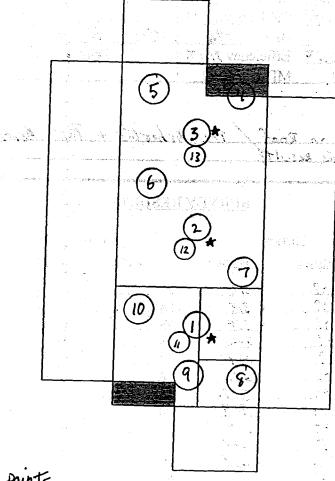
167

ROCKY FLATS ENVIRONWENTAL TECHNOLOGY STI

RADIOLOGICAL SAFETY Drawing Showing Survey Points

Building 910 - First Floor Roof

1 to 3 Indicate Asbestes Sample Location
1 to 10 Indicate Cartan Survey Locations
11 to 13 Indicate Post Sample Survey



A Aspestos Sample points

Sample

W

Roll

RES SHIP WELLOW

Print Name

Signature

ROGKYJELATIS EN ZIRONMENTALITEGHNOLOGYSTIL RADIOLOGICAL SAFETY Drawing Showing Survey Points **Building 910 - First Floor** 700M 105 ROOM 101 B (2)LOADING DOCK 12 ROOM 104 ROOM -102 REST ROOM ROOM 103

Exterior Walls

Appendix D.1.2 Bldg. 910 RLC Radiological Data Radiochemical Samples

Appendix D.1.2.1 Bldg. 910 RLC Radiological Data Radiochemical Samples Chain of Custody

Commodo. Advanced Sciences, Inc.		ひ	CHAIN OF C		Y/SA	MPLE,	USTODY/SAMPLE ANALYSIS REQUEST	EQUEST		9>	9>6331#005
,									L	Page	1 of 2
Collector J. WINGARD/D. LIPPINCOTT			Con	Contact/Requester WOJTASZEK, PAUL				Telephone No.	MSIN	FAX	
RIN 99A6331	·		Sam	Sampling Origin FLOOR - 991				Purchase Order/Charge Code	arge Code		
Project Title			Log	Logbook No. MILKER				Ice Chest No.	Te	Temp.	
To (Lab) S. Cohen & Associates			Met	Method of Shipment FEDERAL EXPRESS				Bill of Lading/Air Bill No.	3111 No. 4533	P4-4515-	933
Protocol								Offsite Property No.			
POSSIBLE SAMPLE HAZARDS/REMARKS ** **	KS				SPE	SPECIAL INSTRUCTIONS		Hold Time	Total Activity Exemption:	ou:	Yes No
Bottle No. Number Ma	Matrix	Date	Time	Location	No/Type Container	Container		Sample Analysis	Vals	۵ ا	Preservative;
	SOLID	04/13/ 1999	9:26 AM	Bldg 910	5-G P/G		RC01B004 (Isotopic Waste) [Rush]	Waste) [Rush]			None None
99A6331- N/A SO 012.002	SOLID	04/13/ 1999	9:36 AM	Bldg 910	5-G P/G		RC01B004 (Isotopic Waste) [Rush]	Waste) [Rush]		60	None
99A6331- N/A SO 013.002	SOLID	04/13/ 1999	9:46 AM	Bldg 910	5-G P/G		RC01B004 (Isotopic Waste) [Rush]	Waste) [Rush]		6.3	None
99A6331- N/A SO 014.002	SOLID	1999	10:52 AM	Bldg 910	5-G P/G		RC01B004 (Isotopic Waste) [Rush]	Waste) [Rush]		7	None None
	SOLID	1999	11:01 AM	Bldg 910	5-G P/G		RC01B004 (Isotopic Waste) [Rush]	Waste) [Rush]			None None
99A6331- N/A SO 016.002	SOLID	04/13/ 1999	11:12 AM	Bldg 910	5-G P/G		RC01B004 (Isotopic Waste) [Rush]	Waste) [Rush]		 	None
99A6331- NA SO 017.002	SOLID	04/13/ 1 1999	10:03 AM	Bldg 910	5-G P/G		RC01B004 (Isotopic Waste) [Rush]	Waste) [Rush]		100	None None
sey Haya	Date/Time R	Received By:	女	Dar	Date/Time R	Relinquished By:	z.	Date/Time Reco	Received By:		Date/Time
ylished By:	Date/Time R	proceived By:	136	Dat 1974 4-23-99	Date/Time R	Relinquished By:		Date/Time Reco	Received By:		Date/Fime
Relinquished By:	Date/Time R	Received By:		Da	1	Relinquished By:		Date/Time Rec	Received By:		Date/Time
	Date/Time R	Received By:		Dar	Date/Time R	Relinquished By:	,,	Date/Time Reco	Received By:		Date/Time
FINAL SAMPLE Disposal Method (e.g., Return to customer, per lab procedure, used in process)	teturn to custon	ier, per lab p	rocedure, used	d in process)		Ī	Disposed By			Date/Time	

99A6331#005 s. 1330 Date/Time Date/Time Date/Time Date/Time Preservative; Packing of Yes None None None None None None None None None None None None None None Total Activity Exemption: Page FAX C.O.C. # Temp. MSIN Purchase Order/Charge Code Received By: Received By Received By Bill of Lading/Air Bill No. Offsite Property No. RC01B004 (Isotopic Waste) [Rush] RC01B004 (Isotopic Waste) [Rush] RC01B004 (Isotopic Waste) [Rush] RC01B004 (Isotopic Waste) [Rush] RC01B004 (Isotopic Waste) [Rush] RC01B004 (Isotopic Waste) [Rush] RC01B004 (Isotopic Waste) [Rush] CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST 8168 910 Daws Telephone No. 3125 NG220000 Ice Chest No. Date/Time Date/Time Hold Time SPECIAL INSTRUCTIONS Relinquished By: Disposed By Relinquished By: Relinquished By. Relinquished By: 66 No/Type Container Feo - X 5-G P/G 5-G P/G 5-G P/G 5-G P/G 5-G P/G 5-G P/G 5-G P/G Harfine Harfine RITER Cabout -910 413891110 FLIDER Date/Time Date/Time Contact/Requester WOJTASZEK, PAUL Sampling Origin Method of Shipment Bldg 910 Bldg 910 Bldg 910 Bldg 910 Bldg 910 Bldg 910 Bldg 910 Location Logbook No. Disposal Method (e.g., Return to customer, per lab procedure, used in process) 0936 C091/ 0946 1052 856 Time 0 875218 Cacifad (
Received By: 7951R Received By: ReceivedBy 4 13999 Date 4249 1119 Date/Time Date/Time 0/1/ SOLID SOLID K. 1633 + 1633 Relinquished By: SOLID SOLID SOLID SOLID SOLID Matrix POSSIBLE SAMPLE HAZARDS/REMARKS
** ** S. Cohen & Associates Wingard CAS Highy Ref # 2 Commodore Advanced Customer Number Collector 1 MINOVA 42 9**9/**A6331 FINAL SAMPLE DISPOSITION Project Title NA Sciences, Inc. Relinquished By: Relinquished By: 99A6331-013.002 99A6331-015.002 99A6331-017.002 Traile 99A6331-011.002 99A6331-014.002 99A6331-016.002 99A6331-012.002 elinquished(B Bottle No. To (Lab) Protocol RIN

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99, 331#005	2 of 2		Preservative; Packing	None None	None None	None None	HN03 4 degrees C						-		Date/Time	Date/Time	Date/Time	Date/Time	
c.o.c.#	Page 2		- 1527	80	60	0_	28-92 39-92	/											Date/Time
		MSIN	sis KH199	[-	[c	[-	0-1531-pp/H)								Received By:	Received By:	Received By:	Received By:	
QUEST			Sample Analysis	Vaste) [Rusl	Vaste) [Rus	Vaste) [Rusl	Nater) [Rus	-							Date/Time	Date/Time	Date/Time	Date/Time	
YSIS RE		Telephone No. 3125		RC01B004 (Isotopic Waste) [Rush]	RC01B004 (Isotopic Waste) [Rush]	RC01B004 (Isotopic Waste) [Rush]	RC01B001 (Isotopic Water) [Rush]												3y
E ANAI				RC01B00	RC01B00	RC01B00	RC01B00								ned By:	ned By:	hed By:	hed By:	Disposed By
SAMPL			No/Type Container	5-G P/G	5-G P/G	5-G P/G	d.			8	X/25/X	*			ne Relinquished By:	ne Relinquished By:	ne Relinquished By:	ae Relinquished By:	
/XQC			Š	9-6	5- 9-	9-9-0 9-0	4-L P					7			Date/Time	Date/Time	Date/Time	Date/Time	
CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	1	stor K, PAUL	Location	Bldg 910	Bldg 910	Bldg 910	Bldg 910									Date/Time Date/Time C64 4.23, 99 08/6			d in process)
HAIN		Contact/Requestor WOJTASZEK, PAUL	Time	10:15 AM	10:31 AM	10:43 AM	10:50 AM				,				\$ P. P. P. P. P. P. P. P. P. P. P. P. P.	V) 	ly:	b procedure, use
		<u>0</u>	Date	04/13/ 1999	04/13/ 1999	04/13/ 1999	04/13/ 1999								Received B.	Received By:	Received By	Received By:	omer, per la
	· 		Matrix	SOLID	SOLID	SOLID	AQUEOUS								Date/Time	Date	Date/Time	Date/Time	Disposal Method (e.g., Return to customer, per lab procedure, used in process)
Advanced			Customer Number												Aryga				Disposal Methoc
7	Inc.			Ž.	₹ Ž	Ž,	N N							-	1y:) 	0	07	MPLE
Commodo	Sciences, Inc.	RIN 99A6331	Bottle No.	99A6331- 018.002	99A6331- 019.002	99A6331- 020.002	99A6331- 032.002								Relinquished By	Relingy shed By	Relinquished By:	Relinquished By:	FINAL SAMPLE DISPOSITION

Commodore dyanced	Advanced		C	HAIN	OF CUSTOD	Y/SAMPL	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	C.O.C. #	.c.# 99A6331#005	1#005
Sciences, inc.	ن								Page 2 of	. 5
RIN 99A6331			ວ໌	Contact/Requestor WOJTASZEK, PAUL	tor K, PAUL		Telephone No. 3125	MSIN	FAX	
Bottle No.	Customer Number	Matrix	Date	Time	Location	No/Type Container	Sample Analysis		Æ	Preservative; Packing
99A6331- 018.002		SOLID	413/99	5101	Bldg 910	5-G P/G	RC01B004 (Isotopic Waste) [Rush]		None	
99A6331- 019.002		Sould		16.01	Bldg 910	5-G P/G	RC01B004 (Isotopic Waste) [Rush]		None	
99A6331- 020.002		SOLID		1043	Bldg 910	5-G P/G	RC01B004 (Isotopic Waste) [Rush]		None	
99A6331- 032.002	*	AQUEOUS	\rightarrow	8,01	Bidg 910	4-L P	RC01B001 (Isotopic Water) [Rush]		HN03 4 degr	HN03 4 degrees C
					4/13	35/				
Relinquished By:	Relinquished By: 1. Wind and CAS 4/13/99	Date/Time	Received By:	sectived By:	Date/Time Date/Time		1By: B10, 910 Date/Time Received By	d By:	4/15/99	Date/Time
Relinquished By:		me S	Received By:	Rett		<u> </u>	Date/Time			Date/Time
Relinquished By: 7891R	Pat #2 4249 1115		Received By:	7.	hee/h	Time Relinquished By:	1 By: Date/Time Received By:	d By:		Date/Time
	.	Date/Time	Received By:		Date/Time	Time Relinquished By:	1 By: Date/Time Received By:	d By:		Date/Time
FINAL SAMPLE DISPOSITION	B. Disposal Method (e.g., Return to customer, per lab procedure, used in process)	Return to custor	ner, per lab pro	ocedure, used in	process)		Disposed By	Da	Date/Time	

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2 Date/Time Preservative; Packing Date/Time Date/Time Date/Time М ö Yes None None None None None None None None None None None None None None Page Total Activity Exemption: FAX 4533 2124 4933 9 0 00 KH119-1528 Temp. B 03 **め** 0 MSIN Telephone No. MSI 3125 Purchase Order/Charge Code NG220000 Received By: Received By: Received By: Bill of Lading/Air Bill No. Offsite Property No. RC01B004 (Isotopic Waste) [Rush] Sample Analysis RC01B004 (Isotopic Waste) [Rush] RC01B004 (Isotopic Waste) [Rush] RC01B004 (Isotopic Waste) [Rush] RC01B004 (Isotopic Waste) [Rush] RC01B004 (Isotopic Waste) [Rush] RC01B004 (Isotopic Waste) [Rush] Date/Time Date/Time Date/Time Date/Time Ice Chest No. N/A Hold Time SPECIAL INSTRUCTIONS Disposed By Relinquished By: Relinquished By: Relinquished By: Relinquished By No/Type Container 5-G P/G 5-G P/G 5-G P/G 5-G P/G 5-G P/G 5-G P/G 5-G P/G 4-23-99 0845 Date/Time Date/Time Date/Time Sampling Origin BASEMENT FLOORS Logbook No. MILKER Method of Shipment FEDERAL EXPRESS Contact/Requester WOJTASZEK, PAUL Bldg 910 Bldg 910 Bldg 910 Bldg 910 Bldg 910 Bldg 910 Bldg 910 Location FINAL SAMPLE Disposal Method (e.g., Return to customer, per lab procedure, used in process) ななな 1:57 PM 2:07 PM 2:13 PM 1:42 PM 1:48 PM 1:15 PM 1:31 PM Time Reselved By: Received By: Received By: Received By 04/13/ 1999 04/13/ 1999 04/13/ 1999 04/13/ 1999 04/13/ 1999 04/13/ 1999 04/13/ 1999 Date/Time Date/Time Date/Time Date/Time SOLID SOLID SOLID SOLID SOLID SOLID SOLID Matrix POSSIBLE SAMPLE HAZARDS/REMARKS
** ** S. Cohen & Associates 427/ Collector J. WINGARD/D, LIPPINCOTT Customer Number 00Mancey ΑŅ. Ϋ́ Ϋ́ ₹ Ž ≸ ₹ Ž ¥ 99A6331 Relinquished By: Relinquished By: Relinguished By: Relinquished By: 99A6331-023.002 99A6331-021.002 99A6331-99A6331-99A6331-99A6331-99A6331-Project Title Bottle No. 022.002 024.002 025.002 027.002 026.002 Fo (Lab) rotocol

9>,,6331#006

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Commodo... Advanced

Sciences, Inc.

C.O.C. #

99,_331#006	se 2 of 2		S Preservative;	None	None	None	3 HN03 4 degrees C	\				·	Date/Time	Date/Time	Date/Time	Date/Time	
C.0.C. t		MSIN FAX	1538 XH1PP - 1538	Sh]	sh] 09	()	sh] ~ 03 KHR9-1529-03						Received By:	Received By:	Received By:	Received By:	
CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		Telephone No. 3125	Sample Analysis	RC01B004 (Isotopic Waste) [Rush]	RC01B004 (Isotopic Waste) [Rush]	RC01B004 (Isotopic Waste) [Rush]	RC01B001 (Isotopic Water) [Rush] K						: Date/Time	. Date/Time	Date/Time	: Date/Time	The second secon
DY/SAMPLE			No/Type Container		5-G P/G RC	5-G P/G RC	4-L P RC		(ag)	Ach	XX		Date/Time Relinquished By:	Date/Time Relinquished By:	Date/Time Relinquished By:	Date/Time Relinquished By:	
N OF CUSTO		Contact/Reguestor WOJTASZEK, PAUL	Location	M Bldg 910	M Bidg 910	M Bldg 910	M Bldg 910						Π	DC&A 4-23-99		<u>T</u>	
CHAI		Contact/R WOJTA	Date Time	04/13/ 2:21 PM 1999	04/13/ 2:29 PM 1999	04/13/ 2:59 PM 1999	04/13/ 2:39 PM 1999						Received By:	L By:	4	Received By:	
			Matrix	SOLID	SOLID	SOLID	AQUEOUS						Date/Time	Date/Time F	Date/Time R	Date/Time R	
Commodol	JC.		Customer Number	MA	V.Y.	δ/N V	N/A						4/22/99	0	00	9	
Commodor	Sciences, inc.	RIN 99A6331	Bottle No.	99A6331- 028.002	99A6331- 029.002	99A6331- 030.002	99A6331- 033.002						Relinquished By:	Relinguished By:	Relinquished By:	Relinquished By:	

997 6331#006 » 1330 Date/Time Date/Time Date/Time Date/Time Preservative; Packing Total Activity Exemption: Yes None None None None None None None None None None None None None None Page FAX Date/Time C.O.C. # Temp. O. X. mount MSIN Purchase Order/Charge Code Received By Received By Received By Received By Bill of Lading/Air Bill No. Offsite Property No. Sample Analysis RC01B004 (Isotopic Waste) [Rush] RC01B004 (Isotopic Waste) [Rush] RC01B004 (Isotopic Waste) [Rush] RC01B004 (Isotopic Waste) [Rush] RC01B004 (Isotopic Waste) [Rush] RC01B004 (Isotopic Waste) [Rush] RC01B004 (Isotopic Waste) [Rush] CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST Date/Time 41/15/99 1330 Date/Time Telephone No. NG220000 Ice Chest No. Date/Time Date/Time Hold Time B125 910 とってと Cabinet SPECIAL INSTRUCTIONS Voc Kecl (Relinquished By: Relinquished By: Relinquished By: Relinquished By: No/Type Container Contact/Requester
WOJTASZEK PAUL
Sampling Origin Method of Shipment VEHICA 5-G P/G 5-G P/G 5-G P/G 5-G P/G 5-G P/G 5-G P/G 5-G P/G MITANA 1509 Date/Time Date/Time capinet Alassa Bldg 910 Bldg 910 Bldg 910 Bldg 910 Bldg 910 Bldg 910 Bldg 910 Location Logbook No. Disposal Method (e.g., Return to customer, per lab procedure, used in process) 13571 Marier 1.413 1407 13/12 1348 36 133 Time 513278 Jaked T881R Date/Time Received By: Received By: 413/18 Date H. 42849 1115 winvered CAS 413/99 1509 SOLID SOLID SOLID SOLID SOLID SOLID SOLID Matrix POSSIBLE SAMPLE HAZARDS/REMARKS
** ** S. Cohen & Associates Commodore Advanced Customer Number NEWS AND A S F 1891R R4 #2 FINAL SAMPLE DISPOSITION Project Title NA Sciences, Inc. 99A6331 Relinquished By: 99A6331-027.002 99A6331-023.002 99A6331-025.002 99A6331-026.002 elinquished By 99A6331-022.002 99A6331-99A6331-Bottle No. Collector 021.002 024.002 o (Lab) Protocol

							#.O.O.C.	C. # 993	99 - 331#002
Commodore		CHAIN C	OF CUSTOD	Y/SAMPLE	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	EQUEST		Page 1	of 2
Sciences, inc.						elephone No.	MSIN	1	
Collector Tra Man Man	1. A.	1277 C	Contact/Requester WOTTASTEK PAIT.	,		3125			
_	The state of	S	Sampling Origin		H	Purchase Order/Charge Code NG220000			
99A(Logb	Logbook No. M. 11 K 9	1	I	Ice Chest No.	Temp.		
roject little NA		Moth	Mothod of Shinment	()	H	Bill of Lading/Air Bill No.	I No. 4533 2124 4955	24 4955	
Fo (Lab) S Cohen & Associates		marki		7 7		Offsite Property No.		•	
Protocol A PA								Vos	- GZ
13	IARKS			SPECIAL INSTRUCTIONS	TRUCTIONS Hold Time	l'ime	Total Activity Exemption:		٦.
**						\Rightarrow	YHR9-1533	333	
	-	+	To Second	No/Twe Container		Sample Analysis			Preservative; Packing
Bottle No. Number	Matrix Date	Time	Location			Mordo (Duch)		ž	None
-	SOLID 4/10/94	1256	Bldg 910	5-G P/G	RC01B004 (Isotopic waste) [rusirj	waste) [nusii]	0	ž	None
,	7	-	DIA 010	5-G P/G	RC01B004 (Isotopic Waste) [Rush]	Waste) [Rush]	•	ž	None
99A6331- /	SOLID	1305	2				(C)	ž	None
99A6331-	SOLID	13/3	Bldg 910	5-G P/G	RC01B004 (Isotopic Waste) [Rush]	Waste) [Rush]	03	ž ž	None None
003.002 v	SOLID	1,1,1	Bldg 910	5-G P/G	RC01B004 (Isotopic Waste) [Rush]	Waste) [Rush]	77	žž	None
004.002		126						Ž	None
99A6331-	SOLID	17.30	Bldg 910	5-G P/G	RC01B004 (Isotopic Waste) [Rush]	: Waste) [Rush]	05	Ž	None
005.002		2		5.G P/G	PC01B004 (Isotopic Waste) [Rush]	Waste) [Rush]		Ž	None
99A6331-	SOLID	1338	Bldg 910			The second of the second of	O		None
99A6331-	SOLID	1244	. Bidg 910	5-G P/G	RC01B004 (Isotopic Waste) [Rush]	Waste) [Rush]		z z	None None
-007.002			Q OOO	Date/Time Relinquished By:		Date/Time Re	Received By:		Date/Time
Relinquished By:	4/20/99 1525 FT	Finder #2	189/R +120/91	n	12	1-22-99/1400	Received By:	2-4	-22.44/1400 Date/Time
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	Date/Time R	received By:	Q	Date/Time Relinquished By:	ed By:	Date/Time Re	Received By:		Date/Time
Relinguashed 13 y:	3	mits 180	H 423-99	5		Date/Time	Received Bv:		Date/Time
Relinquished By:	Date/Time Rece	Received By:	Д	Date/Time Relinquished By:	led By:				
∪ ⊢	Disposal Method (e.g., Return to customer, per lab procedure, used in process)	ver lab procedure, use	d in process)		Disposed By			Date/Time	
DISPOSITION									

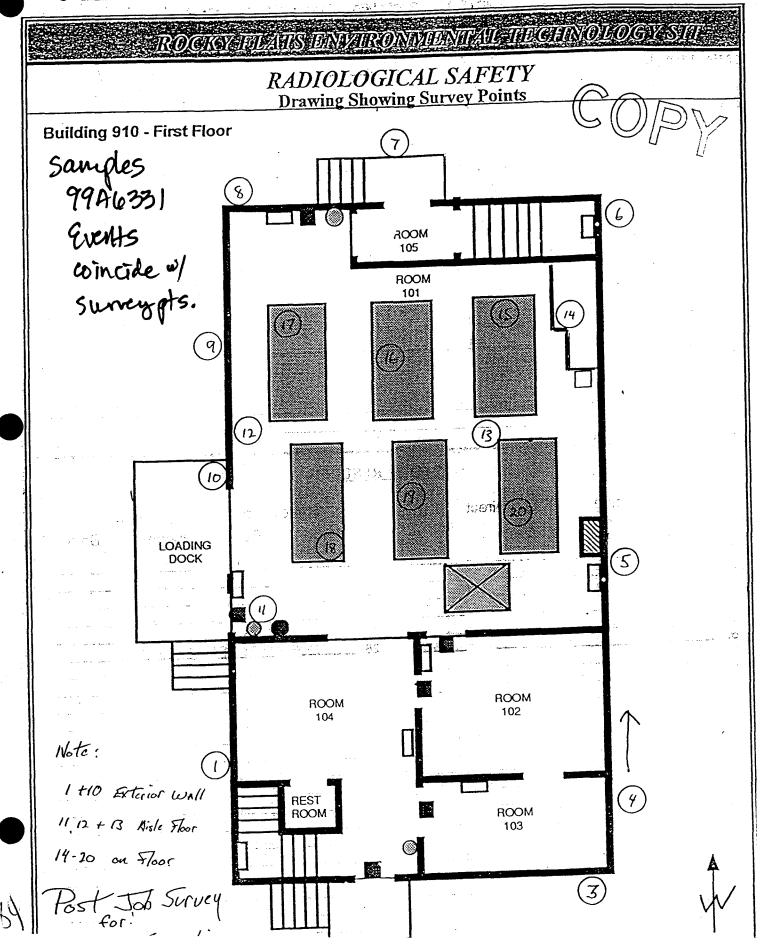
							C.O.C.#	
Commodore		ָ ֓֞֞֞֞֞֞֞֞֞֜֞֞֜֞֞֞֜֞֜֞֓֓֓֓֓֓֞֜֜֡	DAIN	TOTSI OF	V/SAMPLI	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	99A	99AJ31#002
		<u>ت</u>	HAIIN	Jr Costor			Page 2	5 of 2
		3		4			MSIN FAX	ı
RIN		<u>5</u> _	Contact Requestor WOJTASZEK, PAUL	K, PAUL		3125		Preservative :
Say Academic Customer	Matrix	Date	Time	Location	No/Type Container	Sample Analysis K HPP	ma - 1533	Packing
Source No. Number			9	Bldg 910	5-G P/G	RC01B004 (Isotopic Waste) [Rush]	0	None
008.002 - NP	4	1/2/46	(350				A D	ouoN ouoN
\ <u></u>	SOLID		856)	Bldg 910	5-G P/G	RC01B004 (Isotopic Waste) [Rush]	09	None
99A6331-	SOLID		14/0	Bldg 910	5-G P/G	RC01B004 (Isotopic Waste) [Rush]	10	None None
99A6331- 031.002	AQUEOUS	1	707	Bldg 910	4-L P	RC01B001 (Isotopic Water) [Rush] KHIst	sh] K H 199 - 1529 - 0 L	HN03 4 degrees C
		*						
					# 1			
				04				
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							C	
							11/1	Date/Time
Relinquished By: Date/Time 1525	Date/Time	Received By:	#2	CAS +120/99	DateTime Relinquished By:	12 189/4 4-22-99/1400	Mille	4-22-99/1400
The party of the p	1 Q	Received By	20/2		Date/Time Relinquis	Daker I ime	. by.	i i
	Date/Time			1 10 50 50 50 NON	Date/Time Relinquished By:	Date/Time	1By:	Date Illine
Relinquished By:	Date/Time	Received By:	廾		Date/Time Relinquished By:	shed By: Date/Time Received By:		Date/Time
	e.g., Return to custo	mer, per lab	procedure, use	d in process)		Disposed By	Date/Time	
DISPOSITION								

Appendix D.1.2.2

Bldg. 910 RLC Radiological Data

Radiochemical Samples

Sample Locations



COPY

Page ____ of ___

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Appendix D.1.2.3 Bldg. 910 RLC Radiological Data Radiochemical Samples Laboratory Report

CASE NARRATIVE RIN 99A6331

Laboratory Report Identification Number: 1527 1528, 1529, 1533 PSA Module RC01B.3

May 11, 1999

I. Introduction

On April 23, 1999, 30 waste samples and three water samples, (RIN 99A6331), were received for analysis at the Sanford Cohen and Associates (SC&A) Southeastern Environmental Laboratory, located in Montgomery, Alabama. The chain-of-custody accompanying the samples requested they be analyzed on a "rush" basis. The samples were analyzed in accordance with Kaiser-Hill specifications stated in the "Statement of Work for Analytical Measurements, Isotopic Determinations by Alpha Spectrometry, Module RCO1-B.3", dated April 24, 1998, and Modification 09, dated July 16, 1998.

II. Analytical Methodology

The radioanalytical results reported for each sample include the site and laboratory sample identification numbers, collection date, method of analysis, and the quality control samples that were analyzed concurrently. All samples were analyzed by Eichrom Industries, Inc. extraction chromatography method (ACW03) for isotopic uranium, plutonium, and americium.

III. Analytical Results

Deficiencies

See Reanalysis.

Matrix Interferences

There were no indications of matrix interference.

Dilutions

No dilutions were required.

Detection Limits

The required detection limits (RDL) were met for all sample analyses.

Reanalysis

The comparison of the Pu-239 and Am-241 values (equivalency test) between samples SCAQC-1528-LD1 and KH199-1528-01 exceeded 1.5 and was not acceptable according to specifications in the SOW. Because this affected a Quality Control Sample all samples in this batch were reanalyzed beginning with preparation and the results were acceptable. The Original and Reanalysis Sample I.D. are listed below.

Original Laboratory Sample I.D.	Reanalysis Laboratory Sample I.D.	Analysis Type
SCAQC-1528-LC1	SCAQC-1528-LC1B	Pu, Am
SCAQC-1528-LD1	SCAQC-1528-LD1B	Pu, Am
SCAQC-1528-PB	SCAQC-1528-PBB	Pu, Am
KH198-1528-01	KH198-1528-01B	Pu, Am
KH198-1528-02	KH198-1528-02B	Pu, Am
KH198-1528-03	KH198-1528-03B	Pu, Am
KH198-1528-04	KH198-1528-04B	Pu, Am
KH198-1528-05	KH198-1528-05B	Pu, Am
KH198-1528-06	KH198-1528-06B	Pu, Am
KH198-1528-07	KH198-1528-07B	Pu, Am
KH198-1528-08	KH198-1528-08B	Pu, Am
KH198-1528-09	KH198-1528-09B	Pu, Am
KH198-1528-10	KH198-1528-10B	Pu, Am

Deviations from Protocols

There were no deviations from the written protocols and analytical methods.

Contacts with the CTR

There were no contacts with the contract technical representative (CTR) regarding these samples.

IV. Quality Control

Site Samples Used for Quality Control Samples:

Site Sample Number	Laboratory Sample Number	Type of Quality Control Analysis Sample
Laboratory Type II Water	SCAQC-1527-LC1	Laboratory Control Sample
99A6331-011.002 Bldg 910	SCAQC-1527-LD1	Laboratory Duplicate Sample
Laboratory Type II Water	SCAQC-1527-PB	Preparation Blank

Site Samples Used for Quality Control Samples:

Site Sample Number	Laboratory Sample Number	Type of Quality Control Analysis Sample
Laboratory Type II Water	SCAQC-1528-LC1	Laboratory Control Sample
99A6331-021.002 Bldg 910	SCAQC-1528-LD1	Laboratory Duplicate Sample
Laboratory Type II Water	SCAQC-1528-PB	Preparation Blank

Site Samples Used for Quality Control Samples:

Site Sample Number	Laboratory Sample Number	Type of Quality Control Analysis Sample
Laboratory Type II Water	SCAQC-1509-LC1	Laboratory Control Sample
99A4849-006.002 BH94298	SCAQC-1509-LD1	Laboratory Duplicate Sample
Laboratory Type II Water	SCAQC-1509-PB	Preparation Blank

Site Samples Used for Quality Control Samples:

Site Sample Number	Laboratory Sample Number	Type of Quality Control Analysis Sample
Laboratory Type II Water	SCAQC-1533-LC1	Laboratory Control Sample
99A6331-001.002 Bldg 910	SCAQC-1533-LD1	Laboratory Duplicate Sample
Laboratory Type II Water	SCAQC-1533-PB	Preparation Blank

These water samples received on 4/23/99, RIN 99A6331 (Batch No. 1529), were analyzed concurrently with one water sample received on 4/14/99, RIN 99A4849 (Batch No. 1509). Therefore, the Laboratory Control Sample (SCAQC-1509-LC1), the Laboratory Duplicate Sample (SCAQC-1509-LD1), and the Preparation Blank (SCAQC-1509-PB) were used as quality control samples for both sample batches.

The analytical results of all quality control samples met the acceptance criteria specified in the SOW.

Sincerely,

loe Stinson

Laboratory Manager

5) 11/99 Date

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Appendix D.1.2.4

Bldg. 910 RLC Radiological Data

Radiochemical Samples

Laboratory Data

Radioanalytical Results

Report Identification Number: 99A6331

Project Name: Kaiser-Hill

Other Sample ID: BLDG 910

Chain-of-Custody Number: 99A6331#005

Matrix: Waste

Site Sample ID: 011.002

Collection Date: 4/13/99

Date Received:

4/23/99

Batch Number: 1527

-		Laboratory	Activity	2 σ Counting Error	Total Error	MDA
Method Number	Radionuclide	Sample ID	(pCi/g)	(pCi/g)	(pCi/g)	(pCi/g)
ACW03	U-233/234	KH199-1527-01	0.178	0.101	0.107	0.063
ACW03	U-235	KH199-1527-01	0.048	0.056	0.058	0.044
ACW03	U-238	KH199-1527-01	0.438	0.161	0.183	0.062
ACW03	PU-239/240	KH199-1527-01	0.157	0.104	0.108	0.043
ACW03	AM-241	KH199-1527-01	0.527	0.230	0.253	0.169

	Quality Control Samples					
Radionuclide	Laboratory Control Sample (LC)	Laboratory Duplicate Analysis (LD)	Preparation Blank (PB)			
U	SCAQC-1527-LC1	SCAQC-1527-LD1	SCAQC-1527-PB			
Pu	SCAQC-1527-LC1	SCAQC-1527-LD1	SCAQC-1527-PB			
Am	SCAQC-1527-LC1	SCAQC-1527-LD1	SCAQC-1527-PB			

Radioanalytical Results

Report Identification Number: 99A6331

Project Name: Kaiser-Hill

Chain-of-Custody Number: 99A6331#005

Matrix: Waste

Site Sample ID: 012.002

Collection Date: 4/13/99

Date Received:

4/23/99

Other Sample ID: BLDG 910

Batch Number: 1527

		Laboratory	Activity	2 σ Counting Error	Total Error	MDA
Method Number	Radionuclide	Sample ID	(pCi/g)	(pCi/g)	(pCi/g)	(pCi/g)
ACW03	U-233/234	KH199-1527-02	0.179	0.094	0.101	0.032
ACW03	U-235	KH199-1527-02	0.000	0.000	0.000	0.040
ACW03	U-238	KH199-1527-02	0.083	0.063	0.066	0.032
ACW03	PU-239/240	KH199-1527-02	0.190	0.140	0.145	0.106
ACW03	AM-241	KH199-1527-02	0.097	0.169	0.171	0.258

	Quality Control Samples						
Radionuclide	Laboratory Control Sample (LC)	Laboratory Duplicate Analysis (LD)	Preparation Blank (PB)				
U	SCAQC-1527-LC1	SCAQC-1527-LD1	SCAQC-1527-PB				
Pu	SCAQC-1527-LC1	SCAQC-1527-LD1	SCAQC-1527-PB				
Am	SCAQC-1527-LC1	SCAQC-1527-LD1	SCAQC-1527-PB				



Radioanalytical Results

Report Identification Number: 99A6331

Project Name: Kaiser-Hill

Chain-of-Custody Number: 99A6331#005

Matrix: Waste

Site Sample ID: 013.002

Other Sample ID: BLDG 910

Collection Date: 4/13/99

Date Received:

4/23/99

Batch Number: 1527

		Laboratory	Activity	2 σ Counting Error	Total Error	MDA
Method Number	Radionuclide	Sample ID	(pCi/g)	(pCi/g)	(pCi/g)	(pCi/g)
ACW03	U-233/234	KH199-1527-03	0.120	0.081	0.084	0.060
ACW03	U-235	KH199-1527-03	0.015	0.031	0.031	0.042
ACW03	U-238	KH199-1527-03	0.099	0.071	0.074	0.034
ACW03	PU-239/240	KH199-1527-03	0.207	0.138	0.144	0.056
ACW03	AM-241	KH199-1527-03	0.043	0.094	0.094	0.157

	Quality Control Samples						
Radionuclide	Laboratory Control Sample (LC)	Laboratory Duplicate Analysis (LD)	Preparation Blank (PB)				
υ	SCAQC-1527-LC1	SCAQC-1527-LD1	SCAQC-1527-PB				
Pu	SCAQC-1527-LC1	SCAQC-1527-LD1	SCAQC-1527-PB				
Am	SCAQC-1527-LC1	SCAQC-1527-LD1	SCAQC-1527-PB				



Radioanalytical Results

Report Identification Number: 99A6331

Project Name: Kaiser-Hill

Chain-of-Custody Number: 99A6331#005

Matrix: Waste

Site Sample ID: 014.002

Date Received:

4/23/99

Other Sample ID: BLDG 910

Collection Date: 4/13/99

Batch	Number:	<u>1527</u>
	~	

		Laboratory	Activity	2 σ Counting Error	Total Error	MDA
Method Number	<u>Radionuclide</u>	Sample ID	(pCi/g)	(pCi/g)	(pCi/g)	(pCi/g)
ACW03	U-233/234	KH199-1527-04	0.282	0.142	0.152	0.077
ACW03	U-235	KH199-1527-04	0.020	0.040	0.040	0.054
ACW03	U-238	KH199-1527-04	0.271	0.136	0.147	0.043
ACW03	PU-239/240	KH199-1527-04	0.014	0.049	0.049	0.109
ACW03	AM-241	KH199-1527-04	0.008	0.094	0.094	0.181

	Quality Control Samples						
Radionuclide	Laboratory Control Sample (LC)	Laboratory Duplicate Analysis (LD)	Preparation Blank (PB)				
U	SCAQC-1527-LC1	SCAQC-1527-LD1	SCAQC-1527-PB				
Pu	SCAQC-1527-LC1	SCAQC-1527-LD1	SCAQC-1527-PB				
Am	SCAQC-1527-LC1	SCAQC-1527-LD1	SCAQC-1527-PB				



Radioanalytical Results

Report Identification Number: 99A6331

Project Name: Kaiser-Hill

Chain-of-Custody Number: 99A6331#005

Matrix: Waste

Site Sample ID: 015.002

Other Sample ID: BLDG 910

Collection Date: 4/13/99

Date Received:

4/23/99

Batch Number: 1527

		Laboratory	Activity	2 σ Counting Error	Total Error	MDA
Method Number	Radionuclide	Sample ID	(pCi/g)	(pCi/g)	(pCi/g)	(pCi/g)
ACW03	U-233/234	KH199-1527-05	0.381	0.157	0.174	0.069
ACW03	U-235	KH199-1527-05	0.018	0.035	0.036	0.048
ACW03	U-238	KH199-1527-05	0.294	0.136	0.149	0.068
ACW03	PU-239/240	KH199-1527-05	0.100	0.091	0.093	0.086
ACW03	AM-241	KH199-1527-05	-0.033	0.080	0.081	0.179

	Quality Control Samples						
Radionuclide	Laboratory Control Sample (LC)	Laboratory Duplicate Analysis (LD)	Preparation Blank (PB)				
U	SCAQC-1527-LC1	SCAQC-1527-LD1	SCAQC-1527-PB				
Pu	SCAQC-1527-LC1	SCAQC-1527-LD1	SCAQC-1527-PB				
Am	SCAQC-1527-LC1	SCAQC-1527-LD1	SCAQC-1527-PB				



Radioanalytical Results

Report Identification Number: 99A6331

Project Name: Kaiser-Hill

Chain-of-Custody Number: 99A6331#005

Matrix: Waste

Site Sample ID: 016.002

Other Sample ID: BLDG 910

Collection Date: 4/13/99

Date Received:

4/23/99

Batch Number: 1527

		Laboratory	Activity	2 σ Counting Error	Total Error	MDA
Method Number	Radionuclide	Sample ID	(pCi/g)	(pCi/g)	(pCi/g)	(pCi/g)
ACW03	U-233/234	KH199-1527-06	0.390	0.155	0.173	0.065
ACW03	U-235	KH199-1527-06	0.000	0.000	0.000	0.046
ACW03	U-238	KH199-1527-06	0.624	0.200	0.235	0.037
ACW03	PU-239/240	KH199-1527-06	0.247	0.140	0.148	0.081
ACW03	AM-241	KH199-1527-06	-0.045	0.073	0.074	0.205

	Quality Control Samples							
Radionuclide	Laboratory Control Sample (LC)	Laboratory Duplicate Analysis (LD)	Preparation Blank (PB)					
U	SCAQC-1527-LC1	SCAQC-1527-LD1	SCAQC-1527-PB					
Pu	SCAQC-1527-LC1	SCAQC-1527-LD1	SCAQC-1527-PB					
Am	SCAQC-1527-LC1	SCAQC-1527-LD1	SCAQC-1527-PB					



Radioanalytical Results

Report Identification Number: 99A6331

Project Name: Kaiser-Hill

Chain-of-Custody Number: 99A6331#005

Matrix: Waste

Site Sample ID: <u>017.002</u>

Other Sample ID: BLDG 910

Collection Date: 4/13/99

Date Received:

4/23/99

Batch Number: 1527

		Laboratory	Activity	2 σ Counting Error	Total Error	MDA
Method Number	Radionuclide	Sample ID	(pCi/g)	(pCi/g)	(pCi/g)	(pCi/g)
ACW03	U-233/234	KH199-1527-07	0.205	0.108	0.116	0.063
ACW03	U-235	KH199-1527-07	0.016	0.032	0.033	0.044
ACW03	U-238	KH199-1527-07	0.126	0.085	0.088	0.063
ACW03	PU-239/240	KH199-1527-07	0.170	0.125	0.130	0.058
ACW03	AM-241	KH199-1527-07	0.210	0.184	0.189	0.210

Quality Control Samples							
Radionuclide	Laboratory Control Sample (LC)	Laboratory Duplicate Analysis (LD)	Preparation Blank (PB)				
U	SCAQC-1527-LC1	SCAQC-1527-LD1	SCAQC-1527-PB				
Pu	SCAQC-1527-LC1	SCAQC-1527-LD1	SCAQC-1527-PB				
Am	SCAQC-1527-LC1	SCAQC-1527-LD1	SCAQC-1527-PB				

Radioanalytical Results

Report Identification Number: 99A6331

Project Name: Kaiser-Hill

Chain-of-Custody Number: 99A6331#005

Matrix: Waste

Site Sample ID: 018.002

Other Sample ID: BLDG 910

Collection Date: 4/13/99

Date Received:

Batch Number: 1527

		Laboratory	Activity	2 σ Counting Error	Total Error	MDA
Method Number	Radionuclide	Sample ID	(pCi/g)	(pCi/g)	(pCi/g)	(pCi/g)
ACW03	U-233/234	KH199-1527-08	0.229	0.111	0.120	0.034
ACW03	U-235	KH199-1527-08	0.047	0.055	0.056	0.043
ACW03	U-238	KH199-1527-08	0.139	0.086	0.090	0.034
ACW03	PU-239/240	KH199-1527-08	0.042	0.058	0.058	0.077
ACW03	AM-241	KH199-1527-08	0.140	0.153	0.156	0.196

Quality Control Samples							
Radionuclide	Laboratory Control Sample (LC)	Laboratory Duplicate Analysis (LD)	Preparation Blank (PB)				
U	SCAQC-1527-LC1	SCAQC-1527-LD1	SCAQC-1527-PB				
Pu	SCAQC-1527-LC1	SCAQC-1527-LD1	SCAQC-1527-PB				
Am	SCAQC-1527-LC1	SCAQC-1527-LD1	SCAQC-1527-PB				

Radioanalytical Results

Report Identification Number: 99A6331

Project Name: Kaiser-Hill

Chain-of-Custody Number: 99A6331#005

Matrix: Waste

Site Sample ID: 019.002

Other Sample ID: BLDG 910

Collection Date: 4/13/99

Date Received:

4/23/99

Batch Number: 1527

		Laboratory	Activity	2 σ Counting Error	Total Error	MDA
Method Number	Radionuclide	Sample ID	(pCi/g)	(pCi/g)	(pCi/g)	(pCi/g)
ACW03	U-233/234	KH199-1527-09	0.164	0.101	0.106	0.068
ACW03	U-235	KH199-1527-09	0.017	0.035	0.035	0.047
ACW03	U-238	KH199-1527-09	0.212	0.112	0.120	0.038
ACW03	PU-239/240	KH199-1527-09	0.035	0.050	0.051	0.048
ACW03	AM-241	KH199-1527-09	0.030	0.061	0.062	0.083

Quality Control Samples						
Radionuclide	Laboratory Control Sample (LC)	Laboratory Duplicate Analysis (LD)	Preparation Blank (PB)			
U	SCAQC-1527-LC1	SCAQC-1527-LD1	SCAQC-1527-PB			
Pu	SCAQC-1527-LC1	SCAQC-1527-LD1	SCAQC-1527-PB			
Am	SCAQC-1527-LC1	SCAQC-1527-LD1	SCAQC-1527-PB			

Radioanalytical Results

Report Identification Number: 99A6331

Project Name: Kaiser-Hill

Chain-of-Custody Number: 99A6331#005

Matrix: Waste

Site Sample ID: 020.002

Other Sample ID: BLDG 910

Collection Date: 4/13/99

Date Received:

4/23/99

Batch Number: 1527

		Laboratory	Activity	2 σ Counting Error	Total Error	MDA
Method Number	Radionuclide	Sample ID	(pCi/g)	(pCi/g)	(pCi/g)	(pCi/g)
ACW03	U-233/234	KH199-1527-10	0.166	0.098	0.103	0.063
ACW03	U-235	KH199-1527-10	0.000	0.000	0.000	0.044
ACW03	U-238	KH199-1527-10	0.250	0.118	0.129	0.036
ACW03	PU-239/240	KH199-1527-10	0.543	0.213	0.239	0.090
ACW03	AM-241	KH199-1527-10	0.490	0.274	0.291	0.083

	Quality Control Samples							
Radionuclide Laboratory Control Sample (LC) Laboratory Duplicate Analysis (LD) Preparation Blank (PB)								
ับ	SCAQC-1527-LC1	SCAQC-1527-LD1	SCAQC-1527-PB					
Pu	SCAQC-1527-LC1	SCAQC-1527-LD1	SCAQC-1527-PB					
Am	SCAQC-1527-LC1	SCAQC-1527-LD1	SCAQC-1527-PB					



Radioanalytical Results

Report Identification Number: 99A6331

Project Name: Kaiser-Hill

Chain-of-Custody Number: 99A6331#006

Matrix: Waste

Site Sample ID: 021.002

Other Sample ID: BLDG 910

Collection Date: 4/13/99

Date Received:

4/23/99

Batch Number: 1528

Laboratory Code: SCA

		Laboratory	Activity	2 σ Counting Error	Total Error	MDA
Method Number	Radionuclide	Sample ID	(pCi/g)	(pCi/g)	(pCi/g)	(pCi/g)
ACW03	U-233/234	KH199-1528-01	0.414	0.168	0.187	0.072
ACW03	U-235	KH199-1528-01	0.019	0.037	0.038	0.050
ACW03	U-238	KH199-1528-01	0.278	0.136	0.147	0.072
ACW03	PU-239/240	KH199-1528-01B	0.000	0.000	0.000	0.033
ACW03	AM-241	KH199-1528-01B	0.028	0.077	0.077	0.131

Quality Control Samples Preparation Blank (PB) Radionuclide Laboratory Control Sample (LC) Laboratory Duplicate Analysis (LD) U SCAQC-1528-LC1 SCAQC-1528-LD1 SCAQC-1528-PB SCAQC-1528-PBB Pu SCAQC-1528-LC1B SCAQC-1528-LD1B Am SCAQC-1528-LC1B SCAQC-1528-LD1B SCAQC-1528-PBB



Radioanalytical Results

Report Identification Number: 99A6331

Project Name: Kaiser-Hill

AM-241

Chain-of-Custody Number: 99A6331#006

Matrix: Waste

Site Sample ID: 022.002

Other Sample ID: BLDG 910

ACW03

Collection Date: 4/13/99

Date Received:

4/23/99

0.207

Batch Number: 1528

KH199-1528-02B

0.093

Laboratory Code:

0.093

<u>SCA</u>

Laboratory Activity 2 σ Counting Error **Total Error** MDA Method Number Radionuclide Sample ID (pCi/g) (pCi/g) (pCi/g) (pCi/g) ACW03 U-233/234 KH199-1528-02 0.171 0.100 0.106 0.065 ACW03 U-235 KH199-1528-02 0.017 0.033 0.034 0.045 ACW03 U-238 0.065 KH199-1528-02 0.197 0.108 0.115 ACW03 PU-239/240 0.175 0.067 KH199-1528-02B 0.272 0.183

~0.038

Quality Control Samples Radionuclide Laboratory Control Sample (LC) Preparation Blank (PB) Laboratory Duplicate Analysis (LD) U SCAQC-1528-LC1 SCAQC-1528-LD1 SCAQC-1528-PB Pu SCAQC-1528-LC1B SCAQC-1528-LD1B SCAQC-1528-PBB Am SCAQC-1528-LC1B SCAQC-1528-LD1B SCAQC-1528-PBB



Radioanalytical Results

Report Identification Number: 99A6331

Project Name: Kaiser-Hill

Chain-of-Custody Number: 99A6331#006

Matrix: Waste

Site Sample ID: 023.002

Collection Date: 4/13/99

Date Received:

Other Sample ID: BLDG 910

Batch Number: 1528

		Laboratory	Activity	2 σ Counting Error	Total Error	MDA
Method Number	Radionuclide	Sample iD	(pCi/g)	(pCi/g)	(pCi/g)	(pCi/g)
ACW03	U-233/234	KH199-1528-03	0.134	0.082	0.087	0.033
ACW03	U-235	KH199-1528-03	0.000	0.000	0.000	0.041
ACW03	U-238	KH199-1528-03	0.401	0.147	0.167	0.033
ACW03	PU-239/240	KH199-1528-03B	-0.013	0.054	0.054	0.144
ACW03	AM-241	KH199-1528-03B	0.074	0.125	0.126	0.191

Quality Control Samples						
	Radionuclide	Laboratory Control Sample (LC)	Laboratory Duplicate Analysis (LD)	Preparation Blank (PB)		
	U	SCAQC-1528-LC1	SCAQC-1528-LD1	SCAQC-1528-PB		
	Pu	SCAQC-1528-LC1B	SCAQC-1528-LD1B	SCAQC-1528-PBB		
	Am	SCAQC-1528-LC1B	SCAQC-1528-LD1B	SCAQC-1528-PBB		



Radioanalytical Results

Report Identification Number: 99A6331

Project Name: Kaiser-Hill

Chain-of-Custody Number: 99A6331#006

Matrix: Waste

Site Sample ID: 024,002

Date Received:

Other Sample ID: BLDG 910

Collection Date: 4/13/99

4/23/99

Batch Number: 1528

		Laboratory	Activity	2 σ Counting Error	Total Error	MDA
Method Number	Radionuclide	Sample ID	(pCi/g)_	(pCi/g)	(pCi/g)	(pCi/g)
ACW03	U-233/234	KH199-1528-04	0.047	0.053	0.054	0.062
ACW03	U-235	KH199-1528-04	0.016	0.032	0.032	0.043
ACW03	U-238	KH199-1528-04	0.091	0.069	0.072	0.035
ACW03	PU-239/240	KH199-1528-04B	0.199	0.116	0.123	0.041
ACW03	AM-241	KH199-1528-04B	0.004	0.084	0.084	0.169

	Quality Control Samples							
Radionuclide	Laboratory Control Sample (LC)	Laboratory Duplicate Analysis (LD)	Preparation Blank (PB)					
U	SCAQC-1528-LC1	SCAQC-1528-LD1	SCAQC-1528-PB					
Pu	SCAQC-1528-LC1B	SCAQC-1528-LD1B	SCAQC-1528-PBB					
Am	SCAQC-1528-LC1B	SCAQC-1528-LD1B	SCAQC-1528-PBB					



Radioanalytical Results

Report Identification Number: 99A6331

Project Name: Kaiser-Hill

Chain-of-Custody Number: 99A6331#006

Matrix: Waste

Site Sample ID: 025.002

Other Sample ID: BLDG 910

Collection Date: 4/13/99

Date Received:

4/23/99

Batch Number: 1528

Laboratory Code: SCA

		Laboratory	Activity	2 σ Counting Error	Total Error	MDA
Method Number	Radionuclide	Sample ID	(pCi/g)	(pCi/g)	(pCi/g)	(pCi/g)
ACW03	U-233/234	KH199-1528-05	0.188	0.107	0.113	0.066
ACW03	U-235	KH199-1528-05	0.000	0.000	0.000	0.046
ACW03	U-238	KH199-1528-05	0.138	0.089	0.093	0.037
ACW03	PU-239/240	KH199-1528-05B	0.010	0.035	0.035	0.078
ACW03	AM-241	KH199-1528-05B	0.074	0.110	0.111	0.161

Quality Control Samples Preparation Blank (PB) Radionuclide Laboratory Control Sample (LC) Laboratory Duplicate Analysis (LD) U SCAQC-1528-LC1 SCAQC-1528-LD1 SCAQC-1528-PB SCAQC-1528-PBB Pu SCAQC-1528-LC1B SCAQC-1528-LD1B Am SCAQC-1528-LC1B SCAQC-1528-LD1B SCAQC-1528-PBB



Radioanalytical Results

Report Identification Number: 99A6331

Project Name: Kaiser-Hill

Other Sample ID: BLDG 910

Chain-of-Custody Number: 99A6331#006

Matrix: Waste

Site Sample ID: 026.002

Collection Date: 4/13/99

Laboratory

Date Received: Laboratory Code: 4/23/99

Batch Number: 1528

MDA Activity 2 G Counting Error Total Error

	Laboratory	Activity	Z 0 Counting Life	TOTAL ETTO	MIDA
<u>Radionuclide</u>	Sample ID	(pCi/g)	(pCi/g)	(pCi/g)	(pCi/g)
U-233/234	KH199-1528-06	0.214	0.118	0.125	0.070
U-235	KH199-1528-06	0.000	0.000	0.000	0.049
U-238	KH199-1528-06	0.184	0.109	0.115	0.070
PU-239/240	KH199-1528-06B	0.071	0.073	0.074	0.048
AM-241	KH199-1528-06B	0.045	0.065	0.066	0.061
	U-233/234 U-235 U-238 PU-239/240	Radionuclide Sample ID U-233/234 KH199-1528-06 U-235 KH199-1528-06 U-238 KH199-1528-06 PU-239/240 KH199-1528-06B	Radionuclide Sample ID (pCi/g) U-233/234 KH199-1528-06 0.214 U-235 KH199-1528-06 0.000 U-238 KH199-1528-06 0.184 PU-239/240 KH199-1528-06B 0.071	Radionuclide Sample ID (pCi/g) (pCi/g) U-233/234 KH199-1528-06 0.214 0.118 U-235 KH199-1528-06 0.000 0.000 U-238 KH199-1528-06 0.184 0.109 PU-239/240 KH199-1528-06B 0.071 0.073	Radionuclide Sample ID (pCi/g) (pCi/g) (pCi/g) U-233/234 KH199-1528-06 0.214 0.118 0.125 U-235 KH199-1528-06 0.000 0.000 0.000 U-238 KH199-1528-06 0.184 0.109 0.115 PU-239/240 KH199-1528-06B 0.071 0.073 0.074

Quality Control Samples Preparation Blank (PB) Radionuclide Laboratory Control Sample (LC) Laboratory Duplicate Analysis (LD) U SCAQC-1528-LC1 SCAQC-1528-LD1 SCAQC-1528-PB Pu SCAQC-1528-PBB SCAQC-1528-LD1B SCAQC-1528-LC1B SCAQC-1528-PBB Am SCAQC-1528-LC1B SCAQC-1528-LD1B



Radioanalytical Results

Report Identification Number: 99A6331

Project Name: Kaiser-Hill

Other Sample ID: BLDG 910

Chain-of-Custody Number: 99A6331#006

Matrix: Waste

Site Sample ID: 027.002

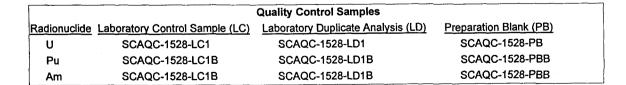
Collection Date: 4/13/99

Date Received:

4/23/99

Batch Number: 1528

		Laboratory	Activity	2 σ Counting Error	Total Error	MDA
Method Number	Radionuclide	Sample ID	(pCi/g)	(pCi/g)	(pCi/g)	(pCi/g)
ACW03	U-233/234	KH199-1528-07	0.242	0.118	0.127	0.062
ACW03	U-235	KH199-1528-07	0.016	0.032	0.032	0.043
ACW03	U-238	KH199-1528-07	0.150	0.092	0.097	0.062
ACW03	PU-239/240	KH199-1528-07B	0.054	0.074	0.075	0.099
ACW03	AM-241	KH199-1528-07B	-0.021	0.056	0.056	0.152





Radioanalytical Results

Report Identification Number: 99A6331

Project Name: Kaiser-Hill

Chain-of-Custody Number: 99A6331#006

Matrix: Waste

Site Sample ID: 028.002

Other Sample ID: BLDG 910

Collection Date: 4/13/99

Date Received:

Batch Number: 1528

Laboratory Code: SCA

		Laboratory	Activity	2 σ Counting Error	Total Error	MDA
Method Number	Radionuclide	Sample ID	(pCi/g)	(pCi/g)	(pCi/g)	(pCi/g)_
ACW03	U-233/234	KH199-1528-08	0.099	0.076	0.078	0.038
ACW03	U-235	KH199-1528-08	0.000	0.000	0.000	0.047
ACW03	U-238	KH199-1528-08	0.098	0.075	0.078	0.038
ACW03	PU-239/240	KH199-1528-08B	0.019	0.039	0.039	0.052
ACW03	AM-241	KH199-1528-08B	-0.013	0.095	0.095	0.201

Quality Control Samples Radionuclide Laboratory Control Sample (LC) Laboratory Duplicate Analysis (LD) Preparation Blank (PB) SCAQC-1528-LD1 SCAQC-1528-PB U SCAQC-1528-LC1 Pu SCAQC-1528-LC1B SCAQC-1528-LD1B SCAQC-1528-PBB SCAQC-1528-LC1B SCAQC-1528-LD1B SCAQC-1528-PBB Am



Radioanalytical Results

Report Identification Number: 99A6331

Project Name: Kaiser-Hill

Other Sample ID: BLDG 910

Chain-of-Custody Number: 99A6331#006

Matrix: Waste

Site Sample ID: 029.002

Collection Date: 4/13/99

Date Received:

4/23/99

Batch Number: 1528

Laboratory Code: SCA

Method Number	Radionuclide	Laboratory Sample ID	Activity (pCi/g)	2 σ Counting Error (pCi/g)	Total Error (pCi/g)	MDA (pCi/g)
ACW03	U-233/234	KH199-1528-09	0.148	0.091	0.096	0.036
ACW03	U-235	KH199-1528-09	0.066	0.067	0.070	0.045
ACW03	U-238	KH199-1528-09	0.147	0.091	0.095	0.036
ACW03	PU-239/240	KH199-1528-09B	0.021	0.041	0.042	0.056
ACW03	AM-241	KH199-1528-09B	-0.033	0.080	0.081	0.179

Quality Control Samples Radionuclide Laboratory Control Sample (LC) Laboratory Duplicate Analysis (LD) Preparation Blank (PB) SCAQC-1528-LD1 SCAQC-1528-PB U SCAQC-1528-LC1 SCAQC-1528-LD1B SCAQC-1528-PBB Pu SCAQC-1528-LC1B SCAQC-1528-PBB SCAQC-1528-LD1B Am SCAQC-1528-LC1B



Radioanalytical Results

Report Identification Number: 99A6331

Project Name: Kaiser-Hill

Other Sample ID: BLDG 910

Chain-of-Custody Number: 99A6331#006

Matrix: Waste

Site Sample ID: 030.002

Collection Date: 4/13/99 Batch Number: 1528

Date Received:

		Laboratory	Activity	2 σ Counting Error	Total Error	MDA
Method Number	Radionuclide	Sample ID	(pCi/g)	(pCi/g)	(pCi/g)	(pCi/g)
ACW03	U-233/234	KH199-1528-10	0.151	0.097	0.102	0.068
ACW03	U-235	KH199-1528-10	0.000	0.000	0.000	0.048
ACW03	U-238	KH199-1528-10	0.071	0.064	0.066	0.038
ACW03	PU-239/240	KH199-1528-10B	0.144	0.113	0.117	0.056
ACW03	AM-241	KH199-1528-10B	0.090	0.151	0.152	0.231

	Quality Control Samples							
Radionuclide	Laboratory Control Sample (LC)	Laboratory Duplicate Analysis (LD)	Preparation Blank (PB)					
U	SCAQC-1528-LC1	SCAQC-1528-LD1	SCAQC-1528-PB					
Pu	SCAQC-1528-LC1B	SCAQC-1528-LD1B	SCAQC-1528-PBB					
Am	SCAQC-1528-LC1B	SCAQC-1528-LD1B	SCAQC-1528-PBB					



Radioanalytical Results

Report Identification Number: 99A6331

Chain-of-Custody Number: 99A6331#002/005/006

Matrix: Water

Project Name: Kaiser-Hill Site Sample ID: 031.002

Other Sample ID: BLDG 910

Collection Date: 4/20/99

Date Received:

4/23/99

Batch Number: 1529

Laboratory Code:

Laboratory Activity 2 σ Counting Error Total Error MDA Method Number (pCi/L) Radionuclide Sample ID (pCi/L) (pCi/L) (pCi/L) ACW03 U-233/234 KH199-1529-01 -0.002 0.009 0.009 0.024 ACW03 U-235 0.007 0.013 0.013 0.021 KH199-1529-01 ACW03 U-238 KH199-1529-01 0.012 0.014 0.014 0.017 ACW03 PU-239/240 0.006 0.010 KH199-1529-01 0.001 0.006 ACW03 0.013 0.018 AM-241 KH199-1529-01 -0.001 0.013

Quality Control Samples Radionuclide Laboratory Control Sample (LC) Laboratory Duplicate Analysis (LD) Preparation Blank (PB) SCAQC-1509-PB IJ SCAQC-1509-LC1 SCAQC-1509-LD1 SCAQC-1509-PB Pu SCAQC-1509-LD1 SCAQC-1509-LC1 SCAQC-1509-PB Am SCAQC-1509-LC1 SCAQC-1509-LD1



Radioanalytical Results

Report Identification Number: 99A6331

Chain-of-Custody Number: 99A6331#002/005/006

Matrix: Water

Project Name: Kaiser-Hill Site Sample ID: 032.002

Other Sample ID: BLDG 910 Collection Date: 4/13/99

Date Received:

4/23/99

Batch Number: 1529

Laboratory Code: SCA

		Laboratory	Activity	2 σ Counting Error	Total Error	MDA
Method Number	Radionuclide	Sample ID	(pCi/L)	(pCi/L)	(pCi/L)	(pCi/L)
ACW03	U-233/234	KH199-1529-02	0.011	0.012	0.012	0.010
ACW03	U-235	KH199-1529-02	0.004	0.009	0.009	0.012
ACW03	U-238	KH199-1529-02	-0.003	0.004	0.004	0.020
ACW03	PU-239/240	KH199-1529-02	0.001	0.007	0.007	0.012
ACW03	AM-241	KH199-1529-02	0.004	0.013	0.013	0.017

Quality Control Samples Preparation Blank (PB) Radionuclide Laboratory Control Sample (LC) Laboratory Duplicate Analysis (LD) SCAQC-1509-PB U SCAQC-1509-LC1 SCAQC-1509-LD1 SCAQC-1509-PB Pu SCAQC-1509-LC1 SCAQC-1509-LD1 SCAQC-1509-LC1 SCAQC-1509-LD1 SCAQC-1509-PB Am



Radioanalytical Results

Report Identification Number: 99A6331

Chain-of-Custody Number: 99A6331#002/005/006

Site Sample ID: 033.002

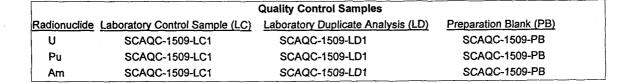
Project Name: Kaiser-Hill

Other Sample ID: BLDG 910 Collection Date: 4/13/99 Date Received: 4/23/99

Batch Number: 1529 Laboratory Code: SCA

Matrix: Water

····		Laboratory	Activity	2 σ Counting Error	Total Error	MDA
Method Number	Radionuclide	Sample ID	(pCi/L)	(pCi/L)	(pCi/L)	(pCi/L)
ACW03	U-233/234	KH199-1529-03	0.007	0.010	0.010	0.010
ACW03	U-235	KH199-1529-03	0.004	0.009	0.009	0.012
ACW03	U-238	KH199-1529-03	0.000	0.000	0.000	0.010
ACW03	PU-239/240	KH199-1529-03	0.002	0.003	0.003	0.003
ACW03	AM-241	KH199-1529-03	0.010	0.011	0.012	0.013





Radioanalytical Results

Report Identification Number: 99A6331

Project Name: Kaiser-Hill

Other Sample ID: BLDG 910

Chain-of-Custody Number: 99A6331#002

Matrix: Waste

Site Sample ID: 001.002

Collection Date: 4/20/99

Date Received:

4/23/99

Batch Number: 1533

Laboratory Code: SCA

· · · · · · · · · · · · · · · · · · ·		Laboratory	Activity	2 σ Counting Error	Total Error	MDA
Method Number	Radionuclide	Sample ID	(pCi/g)	(pCi/g)	(pCi/g)	(pCi/g)
ACW03	U-233/234	KH199-1533-01	0.606	0.202	0.235	0.068
ACW03	U-235	KH199-1533-01	0.018	0.035	0.036	0.048
ACW03	U-238	KH199-1533-01	0.651	0.209	0.246	0.038
ACW03	PU-239/240	KH199-1533-01	0.780	0.285	0.325	0.088
ACW03	AM-241	KH199-1533-01	0.268	0.169	0.177	0.155

Quality Control Samples Radionuclide Laboratory Control Sample (LC) Laboratory Duplicate Analysis (LD) Preparation Blank (PB) SCAQC-1533-PB U SCAQC-1533-LC1 SCAQC-1533-LD1 Pu SCAQC-1533-LD1 SCAQC-1533-PB SCAQC-1533-LC1 SCAQC-1533-PB SCAQC-1533-LC1 SCAQC-1533-LD1



Radioanalytical Results

Report Identification Number: 99A6331

Project Name: Kaiser-Hill

Chain-of-Custody Number: 99A6331#002

Matrix: Waste

Site Sample ID: 002.002

Other Sample ID: BLDG 910

Collection Date: 4/20/99

Date Received:

Batch Number: 1533

Laboratory Code: SCA

		Laboratory	Activity	2 σ Counting Error	Total Error	MDA
Method Number	Radionuclide	Sample ID	(pCi/g)	(pCi/g)	(pCi/g)	(pCi/g)
ACW03	U-233/234	KH199-1533-02	0.640	0.214	0.249	0.072
ACW03	U-235	KH199-1533-02	0.056	0.065	0.067	0.050
ACW03	U-238	KH199-1533-02	0.517	0.189	0.216	0.072
ACW03	PU-239/240	KH199-1533-02	0.125	0.115	0.118	0.068
ACW03	AM-241	KH199-1533-02	0.107	0.101	0.103	0.122

	Quality Control Samples									
Radionuclide	Laboratory Control Sample (LC)	Laboratory Duplicate Analysis (LD)	Preparation Blank (PB)							
U	SCAQC-1533-LC1	SCAQC-1533-LD1	SCAQC-1533-PB							
Pu	SCAQC-1533-LC1	SCAQC-1533-LD1	SCAQC-1533-PB							
Am	SCAQC-1533-LC1	SCAQC-1533-LD1	SCAQC-1533-PB							



Radioanalytical Results

Report Identification Number: 99A6331

Project Name: <u>Kaiser-Hill</u>
Site Sample ID: <u>003.002</u>

Other Sample ID: BLDG 910 Collection Date: 4/20/99 Date Received: 4/23/99

Chain-of-Custody Number: 99A6331#002

Batch Number: 1533 Laboratory Code: SCA

Matrix: Waste

		Laboratory	Activity	2 σ Counting Error	Total Error	MDA
Method Number	Radionuclide	Sample ID	(pCi/g)	(pCi/g)	(pCi/g)	(pCi/g)
ACW03	U-233/234	KH199-1533-03	0.495	0.173	0.200	0.036
ACW03	U-235	KH199-1533-03	0.017	0.033	0.033	0.045
ACW03	U-238	KH199-1533-03	0.480	0.170	0.195	0.036
ACW03	PU-239/240	KH199-1533-03	0.047	0.055	0.056	0.043
ACW03	AM-241	KH199-1533-03	0.041	0.078	0.078	0.123

	Quality Control Samples										
Radionuclide	Laboratory Control Sample (LC)	Laboratory Duplicate Analysis (LD)	Preparation Blank (PB)								
U	SCAQC-1533-LC1	SCAQC-1533-LD1	SCAQC-1533-PB								
Pu	SCAQC-1533-LC1	SCAQC-1533-LD1	SCAQC-1533-PB								
Am	SCAQC-1533-LC1	SCAQC-1533-LD1	SCAQC-1533-PB								



Radioanalytical Results

Report Identification Number: 99A6331

Project Name: Kaiser-Hill

Chain-of-Custody Number: 99A6331#002

Matrix: Waste

Site Sample ID: <u>004.002</u>

Other Sample ID: BLDG 910

Collection Date: 4/20/99

Date Received:

4/23/99

Batch Number: 1533

Laboratory Code: SCA

		Laboratory	Activity	2 σ Counting Error	Total Error	MDA
Method Number	Radionuclide	Sample ID	(pCi/g)	(pCi/g)	(pCi/g)	(pCi/g)
ACW03	U-233/234	KH199-1533-04	0.669	0.224	0.261	0.075
ACW03	U-235	KH199-1533-04	0.019	0.039	0.039	0.053
ACW03	U-238	KH199-1533-04	0.870	0.261	0.314	0.075
ACW03	PU-239/240	KH199-1533-04	0.053	0.053	0.054	0.036
ACW03	AM-241	KH199-1533-04	0.185	0.137	0.142	0.063

	Quality Control Samples									
Radionuclide	Laboratory Control Sample (LC)	Laboratory Duplicate Analysis (LD)	Preparation Blank (PB)							
U	SCAQC-1533-LC1	SCAQC-1533-LD1	SCAQC-1533-PB							
Pu	SCAQC-1533-LC1	SCAQC-1533-LD1	SCAQC-1533-PB							
Am	SCAQC-1533-LC1	SCAQC-1533-LD1	SCAQC-1533-PB							



Radioanalytical Results

Report Identification Number: 99A6331

Project Name: Kaiser-Hill

Chain-of-Custody Number: 99A6331#002

Matrix: Waste

Site Sample ID: 005.002

Other Sample ID: BLDG 910

Collection Date: 4/20/99

Date Received:

4/23/99

Batch Number: 1533

Laboratory Code: SCA

		Laboratory	Activity	2 σ Counting Error	Total Error	MDA
Method Number	Radionuclide	Sample ID	(pCi/g)	(pCi/g)	(pCi/g)	(pCi/g)
ACW03	U-233/234	KH199-1533-05	0.735	0.210	0.256	0.034
ACW03	U-235	KH199-1533-05	0.009	0.033	0.033	0.074
ACW03	U-238	KH199-1533-05	0.727	0.209	0.255	0.059
ACW03	PU-239/240	KH199-1533-05	0.054	0.055	0.056	0.037
ACW03	AM-241	KH199-1533-05	0.100	0.140	0.141	0.200

	Quality Control Samples										
Radionuclide	Laboratory Control Sample (LC)	Laboratory Duplicate Analysis (LD)	Preparation Blank (PB)								
U	SCAQC-1533-LC1	SCAQC-1533-LD1	SCAQC-1533-PB								
Pu	SCAQC-1533-LC1	SCAQC-1533-LD1	SCAQC-1533-PB								
Am	SCAQC-1533-LC1	SCAQC-1533-LD1	SCAQC-1533-PB								



Radioanalytical Results

Report Identification Number: 99A6331

Project Name: Kaiser-Hill

Chain-of-Custody Number: 99A6331#002

Matrix: Waste

Site Sample ID: 006.002

Other Sample ID: BLDG 910

Collection Date: 4/20/99

Date Received:

4/23/99

Batch Number: 1533

Laboratory Code: SCA

		Laboratory	Activity	2 σ Counting Error	Total Error	MDA
Method Number	Radionuclide	Sample ID	(pCi/g)	(pCi/g)	(pCi/g)	(pCi/g)
ACW03	U-233/234	KH199-1533-06	0.875	0.233	0.292	0.059
ACW03	U-235	KH199-1533-06	0.046	0.053	0.055	0.041
ACW03	U-238	KH199-1533-06	1.06	0.261	0.336	0.033
ACW03	PU-239/240	KH199-1533-06	0.020	0.037	0.037	0.060
ACW03	AM-241	KH199-1533-06	0.034	0.049	0.049	0.046

Quality Control Samples Preparation Blank (PB) Laboratory Duplicate Analysis (LD) Radionuclide Laboratory Control Sample (LC) SCAQC-1533-LD1 SCAQC-1533-PB U SCAQC-1533-LC1 SCAQC-1533-PB SCAQC-1533-LD1 Pu SCAQC-1533-LC1 SCAQC-1533-PB SCAQC-1533-LC1 SCAQC-1533-LD1 Am



Radioanalytical Results

Report Identification Number: 99A6331

Project Name: Kaiser-Hill

Chain-of-Custody Number: 99A6331#002

Matrix: Waste

Site Sample ID: 007.002

Other Sample ID: BLDG 910

Collection Date: 4/20/99

Date Received:

4/23/99

Batch Number: 1533

Laboratory Code: SCA

		Laboratory	Activity	2 σ Counting Error	Total Error	MDA
Method Number	Radionuclide	Sample ID	(pCi/g)	(pCi/g)	(pCi/g)	(pCi/g)
ACW03	U-233/234	KH199-1533-07	0.513	0.173	0.201	0.061
ACW03	U-235	KH199-1533-07	0.047	0.054	0.056	0.042
ACW03	U-238	KH199-1533-07	0.486	0.168	0.194	0.060
ACW03	PU-239/240	KH199-1533-07	0.080	0.073	0.074	0.043
ACW03	AM-241	KH199-1533-07	0.080	0.141	0.142	0.215

Quality Control Samples Laboratory Duplicate Analysis (LD) Preparation Blank (PB) Radionuclide Laboratory Control Sample (LC) SCAQC-1533-LC1 SCAQC-1533-LD1 SCAQC-1533-PB U SCAQC-1533-PB SCAQC-1533-LC1 SCAQC-1533-LD1 SCAQC-1533-LC1 SCAQC-1533-LD1 SCAQC-1533-PB Am



Radioanalytical Results

Report Identification Number: 99A6331

Project Name: Kaiser-Hill

Chain-of-Custody Number: 99A6331#002

Matrix: Waste

Site Sample ID: 008.002

Other Sample ID: BLDG 910

Collection Date: 4/20/99

Date Received:

4/23/99

Batch Number: 1533

Laboratory Code: SCA

		Laboratory	Activity	2 σ Counting Error	Total Error	MDA
Method Number	Radionuclide	Sample ID	(pCi/g)	(pCi/g)	(pCi/g)	(pCi/g)
ACW03	U-233/234	KH199-1533-08	0.475	0.160	0.186	0.032
ACW03	U-235	KH199-1533-08	0.029	0.042	0.042	0.040
ACW03	U-238	KH199-1533-08	0.520	0.168	0.197	0.032
ACW03	PU-239/240	KH199-1533-08	0.078	0.079	0.080	0.082
ACW03	AM-241	KH199-1533-08	0.240	0.164	0.171	0.170

Quality Control Samples Preparation Blank (PB) Radionuclide Laboratory Control Sample (LC) Laboratory Duplicate Analysis (LD) SCAQC-1533-PB U SCAQC-1533-LC1 SCAQC-1533-LD1 SCAQC-1533-PB Pu SCAQC-1533-LC1 SCAQC-1533-LD1 SCAQC-1533-LC1 SCAQC-1533-LD1 SCAQC-1533-PB Am



Radioanalytical Results

Report Identification Number: 99A6331

Project Name: Kaiser-Hill

Chain-of-Custody Number: 99A6331#002

Matrix: Waste

Site Sample ID: 009.002

Other Sample ID: BLDG 910

Collection Date: 4/20/99

Date Received:

Batch Number: 1533

Laboratory Code: SCA

		Laboratory	Activity	2 σ Counting Error	Total Error	MDA
Method Number	Radionuclide	Sample ID	(pCi/g)	(pCi/g)	(pCi/g)	(pCi/g)
ACW03	U-233/234	KH199-1533-09	0.731	0.209	0.255	0.034
ACW03	U-235	KH199-1533-09	0.000	0.000	0.000	0.041
ACW03	U-238	KH199-1533-09	0.864	0.230	0.288	0.033
ACW03	PU-239/240	KH199-1533-09	0.024	0.045	0.045	0.073
ACW03	AM-241	KH199-1533-09	0.123	0.103	0.106	0.113

	Quality Control Samples								
Radionuclide	Laboratory Control Sample (LC)	Laboratory Duplicate Analysis (LD)	Preparation Blank (PB)						
U	SCAQC-1533-LC1	SCAQC-1533-LD1	SCAQC-1533-PB						
Pu	SCAQC-1533-LC1	SCAQC-1533-LD1	SCAQC-1533-PB						
Am	SCAQC-1533-LC1	SCAQC-1533-LD1	SCAQC-1533-PB						



Radioanalytical Results

Report Identification Number: 99A6331

Project Name: Kaiser-Hill

Chain-of-Custody Number: 99A6331#002

Matrix: Waste

Site Sample ID: 010.002

Other Sample ID: BLDG 910

Collection Date: 4/20/99

Date Received:

Batch Number: 1533

Laboratory Code: SCA

		Laboratory	Activity	2 σ Counting Error	Total Error	MDA
Method Number	Radionuclide	Sample ID	(pCi/g)	(pCi/g)	(pCi/g)	(pCi/g)
ACW03	U-233/234	KH199-1533-10	0.415	0.155	0.176	0.061
ACW03	U-235	KH199-1533-10	0.016	0.032	0.032	0.043
ACW03	U-238	KH199-1533-10	0.546	0.179	0.209	0.034
ACW03	PU-239/240	KH199-1533-10	0.053	0.061	0.062	0.071
ACW03	AM-241	KH199-1533-10	0.073	0.081	0.083	0.108

Quality Control Samples							
Radionuclide	Laboratory Control Sample (LC)	Laboratory Duplicate Analysis (LD)	Preparation Blank (PB)				
U	SCAQC-1533-LC1	SCAQC-1533-LD1	SCAQC-1533-PB				
Pu	SCAQC-1533-LC1	SCAQC-1533-LD1	SCAQC-1533-PB				
Am	SCAQC-1533-LC1	SCAQC-1533-LD1	SCAQC-1533-PB				



Radioanalytical Results

Quality Control Sample Preparation Blank (PB)

Report Identification Number: 99A6331

Project Name: Kaiser-Hill

Chain-of-Custody Number: None

Matrix: Water

Site Sample ID: Blank 4

Other Sample ID: PB

Collection Date: 4/14/99

Date Received:

4/23/99

Laboratory Code: SCA

Method Number	Radionuclide	Laboratory Sample ID	Activity (pCi/L)	2 σ Counting Error (pCi/L)	Total Error (pCi/L)	MDA (pCi/L)
ACW03	U-233/234	SCAQC-1509-PB	0.006	0.011	0.011	0.018
ACW03	U-235	SCAQC-1509-PB	0.001	0.011	0.011	0.026
ACW03	U-238	SCAQC-1509-PB	0.008	0.014	0.014	0.021
ACW03	PU-239/240	SCAQC-1509-PB	0.016	0.009	0.010	0.004
ACW03	AM-241	SCAQC-1509-PB	0.024	0.026	0.027	0.030

	Quality Control Samples						
Radionuclide	Laboratory Control Sample (LC)	Laboratory Duplicate Analysis (LD)	Preparation Blank (PB)				
U	SCAQC-1509-LC1	SCAQC-1509-LD1	SCAQC-1509-PB				
Pu	SCAQC-1509-LC1	SCAQC-1509-LD1	SCAQC-1509-PB				
Am	SCAQC-1509-LC1	SCAQC-1509-LD1	SCAQC-1509-PB				



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Radioanalytical Results

Quality Control Sample Preparation Blank (PB)

Report Identification Number: 99A6331

Project Name: Kaiser-Hill Chain-of-Custody Number: None Matrix: Water

Site Sample ID: BLANK 2

Other Sample ID: BLANK 2

Collection Date: 4/23/99

Laboratory Code: SCA

		Laboratory	Activity	2 σ Counting Error	Total Error	MDA
Method Number	Radionuclide	Sample ID	<u>(dpm)</u>	(dpm)	(dpm)	(dpm)
ACW03	U-233/234	SCAQC-1528-PB	0.000	0.000	0.000	0.040
ACW03	U-235	SCAQC-1528-PB	0.000	0.000	0.000	0.049
ACW03	U-238	SCAQC-1528-PB	0.015	0.029	0.029	0.040
ACW03	PU-239/240	SCAQC-1528-PBB	0.008	0.029	0.029	0.065
ACW03	AM-241	SCAQC-1528-PBB	0.042	0.048	0.049	0.038

	Quality Control Samples								
,	Radionuclide	Laboratory Control Sample (LC)	Laboratory Duplicate Analysis (LD)	Preparation Blank (PB)					
	U	SCAQC-1528-LC1	SCAQC-1528-LD1	SCAQC-1528-PB					
	Pu	SCAQC-1528-LC1B	SCAQC-1528-LD1B	SCAQC-1528-PBB					
	Am	SCAQC-1528-LC1B	SCAQC-1528-LD1B	SCAQC-1528-PBB					



Radioanalytical Results

Quality Control Sample Preparation Blank (PB)

Report Identification Number: 99A6331

Project Name: Kaiser-Hill Chain-of-Custody Number: None Matrix: Water

Site Sample ID: BLANK 3

Other Sample ID: BLANK 3

Collection Date: 4/23/99

Laboratory Code: SCA

Method Number	Radionuclide	Laboratory Sample ID	Activity (dpm)	2 o Counting Error (dpm)	Total Error (dpm)	MDA (dpm)
ACW03	U-233/234	SCAQC-1533-PB	0.043	0.059	0.060	0.079
ACW03	U-235	SCAQC-1533-PB	0.000	0.000	0.000	0.055
ACW03	U-238	SCAQC-1533-PB	0.010	0.036	0.036	0.079
ACW03	PU-239/240	SCAQC-1533-PB	0.079	0.072	0.073	0.043
ACW03	AM-241	SCAQC-1533-PB	0.059	0.085	0.086	0.081

	Quality Control Samples							
Radionuclide	Laboratory Control Sample (LC)	Laboratory Duplicate Analysis (LD)	Preparation Blank (PB)					
U	SCAQC-1533-LC1	SCAQC-1533-LD1	SCAQC-1533-PB					
Pu	SCAQC-1533-LC1	SCAQC-1533-LD1	SCAQC-1533-PB					
Am	SCAQC-1533-LC1	SCAQC-1533-LD1	SCAQC-1533-PB					



Radioanalytical Results

Quality Control Sample Preparation Blank (PB)

Report Identification Number: 99A6331

Project Name: Kaiser-Hill

Chain-of-Custody Number: None

Matrix: Water

Site Sample ID: BLANK1 Other Sample ID: BLANK1

Collection Date: 4/23/99

Date Received:

4/23/99

Laboratory Code: SCA

Method Number	Radionuclide	Laboratory	Activity	2 σ Counting Error	Total Error	MDA
Wellion Marriber	Nadionacide	Sample ID	(dpm)	(dpm)	<u>(dpm)</u>	<u>(dpm)</u>
ACW03	U-233/234	SCAQC-1527-PB	800.0	0.028	0.028	0.063
ACW03	U-235	SCAQC-1527-PB	0.000	0.000	0.000	0.044
ACW03	U-238	SCAQC-1527-PB	-0.005	0.011	0.011	0.063
ACW03	PU-239/240	SCAQC-1527-PB	0.023	0.043	0.043	0.070
ACW03	AM-241	SCAQC-1527-PB	0.162	0.125	0.129	0.063

	Quality Control Samples									
Radionuclide	Laboratory Control Sample (LC)	Laboratory Duplicate Analysis (LD)	Preparation Blank (PB)							
U	SCAQC-1527-LC1	SCAQC-1527-LD1	SCAQC-1527-PB							
Pu	SCAQC-1527-LC1	SCAQC-1527-LD1	SCAQC-1527-PB							
Am	SCAQC-1527-LC1	SCAQC-1527-LD1	SCAQC-1527-PB							



Radioanalytical Results

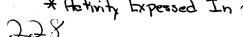
Quality Control Sample Evaluation

Report Identification Number: 99A6331

Project Name: Kaiser-Hill Laboratory Code: SCA

		Labor	atory Contol Sam	ple (LC1) Evaluatio	n	
			(CV)			
			Decay Corrected	(OV)	Laboratory Control	
			Activity of	Laboratory Control	Sample	
	*	Laboratory	Spike Added	Sample Activity	% Recovery	Number of σ
Method Number	Radionuclide	Sample ID	(pCi/b)c	(pCilling	(Accuracy)	Between CV and OV
ACW03	AM-241	SCAQC-1509-LC1	- ¥ 1.91 _∓ 0.053	★ 2.18 _∓ 0.494	114	0.819
ACW03	PU-239/240	SCAQC-1509-LC1	≪ 2.05 _∓ 0.045	★ 2.23 _∓ 0.494	109	0.541
ACW03	U-233/234	SCAQC-1509-LC1	≭ 3.61 _∓ 0.145	★ 3.48 _∓ 0.818	96.4	0.233
ACW03	U-238	SCAQC-1509-LC1	≄ 3.61 _∓ 0.145	¥ 3.46 _∓ 0.813	95.8	0.273
ACW03	AM-241	SCAQC-1527-LC1	4.24 _∓ 0.117	4.90 _∓ 1.30	115	0.798
ACW03	PU-239/240	SCAQC-1527-LC1	4.55 _∓ 0.100	4.89 _∓ 1.25	108	0.431
ACW03	U-233/234	SCAQC-1527-LC1	8.02 _∓ 0.321	7.39 _∓ 1.73	92.1	0.535
ACW03	U-238	SCAQC-1527-LC1	8.02 _∓ 0.321	8.44 _∓ 1.96	105	0.312
ACW03	U-233/234	SCAQC-1528-LC1	8.02 _∓ 0.321	8.03 _∓ 1.90	100	0.002
ACW03	U-238	SCAQC-1528-LC1	8.02 _∓ 0.321	8.87 _∓ 2.09	111	0.602
ACW03	AM-241	SCAQC-1528-LC1B	4.24 _∓ 0.117	3.96 _∓ 1.05	93.5	0.415
ACW03	PU-239/240	SCAQC-1528-LC1B	4.55 _∓ 0.100	4.40 _∓ 1.14	96.8	0.203
ACW03	AM-241	SCAQC-1533-LC1	4.24 _∓ 0.117	5.13 _∓ 1.39	121	1.02
ACW03	PU-239/240	SCAQC-1533-LC1	4.55 _∓ 0.100	5.03 _∓ 1.32	110	0.569
ACW03	U-233/234	SCAQC-1533-LC1	8.02 _∓ 0.321	8.64 _∓ 2.04	108	0.447
ACW03	U-238	SCAQC-1533-LC1	8.02 🛨 0.321	8.51 _∓ 2.01	106	0.357

						Ratio of the Difference
		Labora	tory Duplicate San	nple (LD1) Evaluati	on	Between the Sample
						Activities and the
						Propagated
					Difference Between	Measurement
					Original Activity and	Original Activity and
			Original Sample	Duplicate Sample	Duplicate Sample	Uncertainty of the
		Laboratory	Activity	Activity	Activity	Difference at 2 σ
Method Number	Radionuclide	Sample ID	(pCilly a	(pCi/LY q	(F)	(F/E)
ACW03	U-233/234	SCAQC-1509-LD1	→ 0.012 _∓ 0.014	¥ 0.005 _∓ 0.014	0.007	0.373
ACW03	U-235	SCAQC-1509-LD1	★ 0.005 _∓ 0.010	★ -0.002 _∓ 0.004	0.007	0.634
ACW03	U-238	SCAQC-1509-LD1	★ 0.009 _∓ 0.015	★ 0.009 _∓ 0.013	0.000	0.022
ACW03	PU-239/240	SCAQC-1509-LD1	★ 0.009 _∓ 0.007	★ 0.016 _∓ 0.011	0.008	0.569
ACW03	AM-241	SCAQC-1509-LD1	★ 0.005 _∓ 0.006	≯ 0.002 _∓ 0.006	0.002	0.293
ACW03	U-233/234	SCAQC-1533-LD1	0.606 + 0.235	0.658 + 0.248	0.052	0.152
ACW03	U-235	SCAQC-1533-LD1	0.018 = 0.036	0.018 + 0.036	0.000	0.002
ACW03	U-238	SCAQC-1533-LD1	0.651 ₊ 0.246	0.655 _∓ 0.247	0.004	0.011
ACW03	PU-239/240	SCAQC-1533-LD1	0.780 + 0.325	0.787 = 0.303	0.007	0.016
ACW03	AM-241	SCAQC-1533-LD1	0.268 _∓ 0.177	0.319 = 0.179	0.052	0.205
ACW03	U-233/234	SCAQC-1527-LD1	0.178 🔭 0.107	0.261 + 0.134	0.083	0.481
			Montgomery, Alabama * 36117	*334.272.2234 * FAX 334.213.04	07	
* Activity E	xpessed .	In POIL				063
\$ ' ·	•	. ,	47			



Radioanalytical Results

Quality Control Sample Evaluation

Report Identification Number: 99A6331

Project Nar	ne: <u>Kaiser-Hill</u>				Laboratory Co	ode: <u>SCA</u>
ACW03	U-235	SCAQC-1527-LD1	0.048 _∓ 0.058	0.017 _∓ 0.034	0.032	0.467
ACW03	U-238	SCAQC-1527-LD1	0.438 _± 0.183	0.287 _∓ 0.142	0.151	0.651
ACW03	PU-239/240	SCAQC-1527-LD1	0.157 _∓ 0.108	0.460 _∓ 0.223	0.302	1.22
ACW03	AM-241	SCAQC-1527-LD1	0.527 🛨 0.253	0.582 + 0.265	0.055	0.150
ACW03	U-233/234	SCAQC-1528-LD1	0.414 🛨 0.187	0.243 🛖 0.131	0.172	0.751
ACW03	U-235	SCAQC-1528-LD1	0.019 + 0.038	0.000 + 0.000	0.019	0.493
ACW03	U-238	SCAQC-1528-LD1	0.278 + 0.147	0.082 # 0.070	0.196	1.20
ACW03	PU-239/240	SCAQC-1528-LD1B	0.000 ± 0.000	0.019 + 0.047	0.019	0.392
ACW03	AM-241	SCAQC-1528-LD1B	0.028 _± 0.077	0.206 _± 0.181	0.179	0.910

RC01

DATA QUALITY ASSESSMENT REPORT Rocky Flats Environmental Technology Site

RIN Number	Analytical Method/PSA Line Number	Review Level
99A6331	Uranium, Plutonium, Americium by Alpha	Validation
(Lab ID# KH199-1527, 1528,	Spectrometry in waste and water/ RC01-B004 and	
1533, 1529)	RC01-B001	

Analytical Laboratory	Assessment Performed By	Number of Samples/
Sanford Cohen & Associates	TechLaw, Inc.	30/ Waste/ RC01-B004
(SC&A)		3/Aqueous/RC01-B002

Sample Numbers: 99A6331-011.002, 99A6331-012.002, 99A6331-013.002, 99A6331-014.002, 99A6331-015.002, 99A6331-016.002, 99A6331-017.002, 99A6331-018.002, 99A6331-019.002, 99A6331-020.002, 99A6331-032.002, 99A6331-021.002, 99A6331-022.002, 99A6331-023.002, 99A6331-024.002, 99A6331-025.002, 99A6331-026.002, 99A6331-027.002, 99A6331-028.002, 99A6331-029.002, 99A6331-030.002, 99A6331-033.002, 99A6331-001.002, 99A6331-002.002, 99A6331-003.002, 99A6331-004.002, 99A6331-005.002, 99A6331-006.002, 99A6331-007.002, 99A6331-008.002, 99A6331-009.002, 99A6331-010.002, 99A6331-031.002

Quality Control Item	Reviewed (Y or N)	Non-Compliance Identified
General: (Cover Page, Table of Contents, Data Review Checklist (DRC), General SDP Requirements, Narrative)	Y	N
Chain of Custody, Preservation, Holding Times	Y	N
Sample Results	Y	Comment 1
QC Sample Results	Y	N
Duplicate Sample Results	Y	N
Laboratory Control Sample Results	Y	N
Preparation Blank Results	Y	N
Standards Summary	Y	N
Instrument Calibration Summary	Y	N
Counting Raw Data Summary	Y	N
Electronic Data Deliverable (EDD)	Y	N
INSTRUMENT CALIBRATION PACKAGE		$\left[\left[\left[\left(\left[\left(\mathbf{N}_{i}^{T} \right] \right] \right] \right] \right] = \left[\left[\left(\left[\left(\left[\left(\mathbf{N}_{i}^{T} \right] \right] \right] \right] \right] \right] + \left[\left(\left[\left(\left[\left(\left[\left(\left[\left(\mathbf{N}_{i}^{T} \right] \right] \right] \right] \right] \right] \right] \right] \right] \right] \right]$
Structural Requirements		N
General Requirements	A STAN	N
Energy Calibration	Ý	N
Backgrounds	Y	N
Efficiency Calibration	Y	N
Other:	N/A	N/A

Y N N/A

Item was reviewed pron-purposed was literary letter was not reviewed over the compliance was not identified is not applicably one line item JUN 1 4 1999

June 14, 1999

DA-RC01-v1 DQA6331a/RT

Action Items: None.

Comments:

1. Sample Results: The laboratory is reporting an uncertainty of +/- 0.000 for several analytes. After communicating with the laboratory it reports that this is due to software limitations and is working to correct the problem. No action was taken. [153]

Verification/Validation Signature: Kichard Thurman	Date:_	6/14/99
Reviewer Signature:	Date:	6/14/99
(Validation Only)		

Appendix D.2 Bldg. 910 Historical Chemical Data

Appendix D.2.1 Bldg. 910 Historical Chemical Data Metals

Appendix D.2.1.1

Bldg. 910 Historical Chemical Data

Metals

Laboratory Data

FORM 1A-1

INORGANIC ANALYSIS DATA SHEET

Lab Name: Building 559 PA Inorganic Laboratories Sample No.; Lab Sample ID: X-98A1506-001 Bidg 910 Paint Chips Sample Bection: **ICPAES** Lab Sample I.D.s beginning with X' indicates TCLP Extract. % Solids for Sample: 100,0000 Date Sampled; 4/1/98 SDG No. : APR02 Lab Receipt Date: 4/1/98 QC Report No.: SD040298,RPT Matrix Water Soil Sludge Other

Elements Identified and Messured

Concentration Units:

Analyte	Concentration	c	T				~~		-	+	M
Alumini/m	0.9000	T)	┿				<u> </u>	*****	,,,,,		P
Antimony	0,3000	_ <u>ŭ</u> _	╂								P
Arsenic	0.3000	- ű -	 								F
Barlum	0.8142	В	╂		مل الله						F
Beryllium	0,0150	- ö -	├								-
Cedmium	0.0654	В	┼	·		<u>.</u>					
Calclum	321,4587	В	├			Ē			***		
Chrombum	0,1500	-u -	}			٠					F
Cobalt	0.1500	- Ŭ -	}								P
Copper	0,4035	- B	╂								┝╤
iron	211,6297	- <u>B</u> -	├								F
Lead	0.2769	 -	├								F-
Magneslum	8.9258	- B	!		-						1
Manganese '	2.9829	- B	 								- <u>P</u>
Molybdenum	0,1500	- [] -									P
Nickel			 -								P
Phasphorus	0.3435	B									P
Selenium	9.7413	В	L.								P
Silver	0.3800	Ď.									P
Strontium	0.0900	U	<u> </u>								P
Thaillum	0.3783	B									þ
litanium	0.4998	B									þ
/ahadlum	0.0600	U									P
Inc	0,2400	U									P
-11sts	4.9716	В									P

Color Before:

Red

Clarity Before: Cloudy

Color After:

Colorless

Clarity After:

Clear

Texture:

Artifacts:

Fine mesh red solids left on TCLP Filter.

Comments;

Sample = 100 % solids. Pressure libration of the TCLP solids extract through a standard TCLP pressure filtration unit, containing a 0.7 micron borosilicate glass fiber filter, was performed to obtain the TCLP final sample extract.

BLDG 881 ROOM 112 KAD LABS

FAX NO. 303 966 3400 FAX NO. 303 866 2556

P. 04 r. U4

FORM 1A-1

INORGANIC ANALYSIS DATA SHEET

Lab Name: Building 559 PA Inorganic Laboratories Sample No.: Lab Sample ID: X-98A1506-002 Bldg 910 Paint Chips Sample Lab Sample LD,s beginning with X indicates TCLP Extract. Section: KCPAES % Solide for Sample : 100,0000 Date Sampled: 4/1/98 APR02 SDG No. : Lab Receipt Date: 4/1/98 SD040298.RPT QC Report No.: Matrix Water Soli gingåå Other

Elements Identified and Messured

Concentration Units: mo/L

	Approximation Allifat	rti Ph.m.	N	٧	*	E	0	0	8	+	
Analyta	Concentration	C	T				Q		****	*****	M
Aluminum	0.0000.0	U	1								P
Antimony	0.9192	В	1-						~~~		P
Arsenic	0.3000	U	1								P
Barrin	0.1500	U	1								P
Beryllium	0.0150	U	1								P
Cadmium	0.0800	U	1								1 12
Calcium	68,9721	В			_	E					P
Chromkum	174.6361	· · · · · · · · · · · · · · · · · · ·	1								P
Cobatt	0.8678	В	1-								4
Copper	0,4181	В	1								P
Iron	37,7590	В									P-
Lead	0.2400	U	1								P
Magneslum	4,3360	В	1	~					~		P
Manganosa	0.3876	В	1		_						P
Molybdanum	0.1500	U	1			_					P
Nickel	0.1500	- Ū	 								P
Phosphorus	165.8118	В	1								1-p
Selenium	0,3800	Ū	1-								P
Silver	0.0900	<u>. Ū</u>	-								1 6
Strontium	0,2982	В	├ ─								+ p
Thellum	0.3000	ีบ	1-						سعاحي		
Titanium	0,0600	Ū	+								P
Váhádium	0.2400	Ť	╁─								
Zine	227.G92A	B	1						~~-		P

Color Before:

Yellow

Clarity Before: Cloudy

Color After; Yellow

Clarity After:

Clear

Texture:

Artifects:

Fine mesh orange solids left on TCLP Fitter.

Comments:

Sample = 100 % acikis. Pressure mystion of the TCLP solids extract through a significant TCLP pressure filtration unit, containing a 0.7 micron borosilicate glass fiber filter, was performed

BLDG 881 ROOM 112 KAD TUR?

FAX NO. 303 966 3400 FAX NU. BUB BUB ZOOD

P. 05 r. U0

PORM 1A-1

INORGANIC ANALYSIS DATA SHEET

Lab Name: Building 559 PA Inorganic Laboratories Sample No.: 3 Lab Sample ID: X-98A1506-003 Bldg 910 Paint Chips Sample Section: **ICPAES** Lab Saropic I.D.s beginning with X' Indicates TCLP Extract. % Bollds for Sample : 100,0000 Date Sampled: 4/1/88 8DG No.: APR02 Lab Receipt Date: 4/1/98 QC Report No.: SD040298,RPT Matrix: Water Soil Sludge Other

Elements Identified and Measured

Concentration United

Concentration 1.0440 0.3000 0.3000 0.4302 0.0150 0.1323 151.3722 0.5478 1.2612	B U U B U B		P P P P P
0.3000 0.3000 0.4302 0.0150 0.1323 151.3722 0.5478 1.2612	U B U B B		р р р
0.3000 0.4302 0.0150 0.1323 151.3722 0.5478 1.2612	8 U B B	E	р р
0.4302 0.0150 0.1323 151.3722 0.5478 1.2612	8 U B B	E	4
0.0150 0.1323 151.3722 0.5478 1.2612	B B B	E .	P
0.1323 151.3722 0.5478 1.2612	<u>В</u>	E .	
0.5478 1.2812	В	E .	P
0.5478 1.2812	В	 	
1.2612		Į.	P
	В		P
0.4848	B		P
51.2934	B		4
0.3333	B		- q
8.3922	В		P
1,2189	В		P
0.1500	U	<u> </u>	P
	В		P
	8		P
0,3800	Ū		~p
0.0900	บ		P
0,2595	В		P
0,3000	ù	<u> </u>	P
		<u> </u>	P
			P
6.9778	<u>B</u>	[P
	0.3333 8.3922 1.2189 0.1500 0.1520 4.3611 0.3600 0.0900 0.2595 0.3000 0.0600	0.3333 B 8.3922 B 1.2189 B 0.1500 U 0.1920 B 4.3811 B 0.3800 U 0.2585 B 0.3000 U 0.2685 C	0.3333 B 8.3922 B 1.2169 B 0.1600 U 0.1920 B 4.3611 B 0.3600 U 0.0900 U 0.2595 B 0.3000 U 0.0600 U 0.2400 U

Color Before:

Yellow

Clarity Before: Cloudy

Color After:

Coloriess

Clarity Afters

Clear

Texture:

Artifacts:

Fine mesh brown solids left on TCLP Filter.

Comments:

Sample = 100 % splids. Preserve filtration of the TOLP solids extract through a standard TCLP pressure filtration unit, containing a 0.7 micron bonesticate glass fiber filter, was performed

P. 06 r. UU

FORM 1A-1

INORGANIC ANALYSIS DATA SHEET

Lab Name: Building 559 PA Inorganic Laboratories Sample No.: Lab Sample ID: X-98A1506-004 Bldg 910 Paint Chips Sample SeoSon: **ICPAES** Lab Sample I.D.s beginning with X' indicates TCLP Extract. % Solids for Sample : 100.0000 Date Sampled: 4/1/86 8DG No. : APR02 Lab Receipt Date: 4/1/98 QC Report No.: SD040298.RPT Matrix: Water Son Studge Other

Elements identified and Measured

	Concentration Units:	mg/L								
			N	٧	•	Ε	0	O	5	+
alyte	Concentration	C	T				Q			
	0,9 000	U	7							

Analyte	Concentration	C	NV'EOOS+	M
Aluminum	0,9000	Ü		m
Antiroony	0.3000	Ü		- F
Arsenic	0.3000	-Ū-		P
Barium	1,3860	B		+ F
Beryllum	0.0150	<u> </u>		P
Cadmium	0.0600	Ū		-
Calcium	39.1230	8	<u> </u>	++
Chromium	8,2404			P
Coball	0.7593	B		
Copper	0.3000	- Ū		4
lcoa	1,5804			P
Lead	0.2550	B		P
Magneelum	2.0256	B		
Manganese	0.3630	B		+~~ ``
Molybdenum	0.1500	- Ū-		P
Nicke	0.1500	Ū		1 -
Phosphorus	11.3882	8		
Selenium	0,8600	บิ		1-5
Silver	0,0900	ü		P
Strontium	0.0873	8		+ =
Thallium	0.3000	ŭ		F
litanium	0.0600	Ŭ	· · · · · · · · · · · · · · · · · · ·	╅
∕aneαiuπ	0.2400	ŭ		╅∽┢╴
Zina	15.1647	B		P
				

Color Before:

Yellow

Clarity Before: Cloudy

Color After:

Yellow

Clarity After:

Clear

Texture:

Artifacts:

Fine mesh red colids left on TCLP Filter.

Comments:

Sample = 100 % solids. Pressure filtration of the TCLP solids extract through a standard TCLP pressure filtration unit, containing a 0.7 micron borositioate glass fiber filter, was performed

FORM 1A-1

INORGANIC ANALYSIS DATA SHEET

Lab Namer		Building 569 PA Inorga	inic Laboratories	Sample No.: 5
Lab Sample ID:	X-98A15	08-005	Bldg 910 Paint Chips Sample	
Section:		ICPAES '		ple I.D.s beginning with
% Solids for Sar	nple :	100.0000		
Date Sampled:		4/1/98	adg no. :	APR02
Lab Receipt Det	å:	4/1/98	QC Report No.:	SD040298.RPT
Matrix:	Water Soil Sludge Other	<u>x</u>		

Elements Identified and Measured

Concentration Units: mg/L

	a manufacture and designation of the second	201281-72							-		
Analyte	T		N	<u>v</u>		E		0	≗.	+	-
	Concentration	C					Q				M
Akıminum	0.9375	В									P
Antimony	0.3000	น									P
Araenic	0.3000	U	Γ								P
Barjum	0.1578	В	Г								T P
Beryllum	0.0150	U	Г					***			P
Cadmium	0.0600	Ü	1								P
Calcium	21.1422	В	1			E					P
Chromium	0.1500	U	1	***							ተ′~ <u>ት</u>
Cobalt	0.1500	Ü	\vdash							-	P
Copper	0.3000	Ü,	1	_							+
iron	9.8847	B									∱ ~}~
Lead	363,6113		┯				***				P
Magnesium	1.0086	В	1-								+- }-
Mangancee	0.0399	B	1-	*	~~~						P
Molybdenum	0.1500	Ü	-	*****	-				-,		1 5
Nickel	0,1500	Ū	 								P
Phosphorus	1,5000	ũ						~~~	-		1-5-
Salenium	0.3600	บ	╁─								P
Silvar	0.0900	Ü	 -	~~							P
Strontium	0.0450	8	├-								
Thallium	0,3000	ü	-								+
Titantum	0.0600	- ü-	-								P
Vanadium	0.2400	~~ ``	-								P
Zinc	1.9161	<u>B</u>	٠		~~	4					
	1.9101		<u> </u>						~~~		P
			Į.								i

Color Before:

Colorless

Clarity Before: Cloudy

Color After:

Colorless

Clarity After: Clear

Texture:

Artifacts:

Fine mesh red solids tell on TCLP Filter.

Commenta:

Sample = 100 % solids. Pressure filtration of the TOLP solids extract through a standard TOLP pressure filtration unit, containing a 0.7 micron borositicate glass fiber filter, was performed



P. 08

AFK-20-98 MUN 13:12 AFK-20-98 MUN 13:11

FORM 1A-1

INORGANIC ANALYSIS DATA SHEET

Lab Name: Building 559 PA Inorganic Laboratories Sample No.: Lab Sample ID: X-98A1506-005 D Bldg 810 Paint Chips Sample Lab Duplicate Section: **ICPAES** Lab Sample I.D,s beginning with X' Indicates TCLP Extract. % Solide for sample; 100.0000 **Pate Sumpled:** 4/1/98 SDG No. : APR02 Lab Receipt Date: 4/1/98 QC Report No.: SD040298,RPT **Matrix**: Water Soli Sludge Other

Elements Identified and Measured

Concentration Units: mg/L

			N	V.	*	E	٥	٥	2	+	
Analyte	Concentration	G	Г		-		a				M
Akuminum	0,9354	В							++		P
Antimony	0.3000	Ü	\vdash								P
Arsenic	0,3000	u			-	•					P
Barlum	0.1500	U				_				******	P
Beryllium	0.0150	Ü	 						·		
Cadmium	0.0600	Ū	1					4	••••	• • •	P
Calcium	17.7858	B	-		-	Ë	\ <u></u>	~=-			P
Chromium	0.1500	Ū	┢┈			_				~ ~	P
Cobalt	0,1500	-	├~								P
Copper	0.3196	B	├-				~				P
Iron	0.6000	~_U	-		•						P
Lead	366.4257	 ,	~~		•		·				P
Magnesium	0,7494	В									P
Manganese	0,0300	- u	┝┯						-		P
Molybdenum	0.1500	-ŭ	١-,								
Nickel	0.1500	ū	-								P-
Phosphorus	1,6000	Ü	├		~~~	٠,					P
Selenium	0,3600	Ü	Ι				_		_		- F
Silver	0.0900	บ	⊢		~	_					P
Strontium	0.0336	8	-						٠		3
Thallium	0.3000	Ü									P
Titanium											ρ
Vanadium	0.0600	<u>u</u>		~_							P
Zino	0.2400	Ū.	~~								P
	1,4208	В									P
·											1

Color Before;

Colorless

Clarity Before: Cloudy

Color Affer:

Colorless

Clarity After:

Clear

Toxiure:

Artifacts:

Fine mesh red solids left on TCLP Filter.

Comments:

Sample = 100 % solids. Pressure filtration of the TCLP solids extract through a standard TCLP pressure filtration unit, containing a 0.7 micron borosilicate glass fiber filter, was performed



FORM 1A-1

INORGANIC ANALYSIS DATA SHEET

Lab Name: Building 559 PA Inorganic Laboratories Sample No.: Lab Sample ID: X-98A1606-008 Pkig 910 Paint Chips Sample Section: **ICPAES** Lab Sample I.O.s beginning with X' indicates TCLP Extract. % Solids for Sample: 100.0000 Date Sampled: 4/1/98 SDG No. : APR02 Lab Receipt Date: 4/1/98 QC Report No.: 8D040298,RPT Matrix: Water Soli Sludge Other

Elements Identified and Measured

	Concentration Units:	mg/L	N V * E O O S +	
Analyte	Concentration	1	Q	145
Aluminum	0.9000	U		P
Antimony	0,3000	·		
Arsenio	0,3000			1
Harkim	0.5717			+ -
Beryillum	0.0150			P
Cadmium	0.0600			1 1
Calcium	250.9161	8	Е	- P
Chromium	0.1500			1 p
Cobalt	0.1500			1 - P
Соррег	0.3198			P
lron	1.1355			P
Lead	0.2400	υ		F
Magnesium	1.6638	B		w
Mangenese	0.1275	B		
Molybrighum	0.1500	<u> </u>		F
Nickel	0.1500			- hung-
Phosphorus	2.5767	8		
Selenium	0.3600	ŭ		P
Silver	0.0900			-
Strontlum	0.2163			P
Thadium	0.3000	ü	 	
Trantum	0,0600	Ü		+
Vanadium	0.2400	Ü	 	
Zinc	2.0964	- B		P
	Z.0904	_ <u>D</u>		
	h		<u>L</u>	

Color Bufore:

While

Clarity Before: Cloudy

Color After:

Colortess

Clarity After:

Clear

Texture:

Artifacts;

Fine mesh white solids left on TOLP Filter.

Comments:

Sample = 100 % solids. Pressure filtration of the TCLP solids extract through a standard TCLP pressure filtration unit, containing a 0.7 micron burgalicate plass fiber filter, was performed

FORM 1A-1

INORGANIC ANALYSIS DATA SHEET

Lab Name; Building 559 PA Inorganic Laboratories Sample No.: _8_ Lab Sample ID: X-98A1506-007 Bldg 910 Paint Chips Sample Section: **ICPAES** Lab Sample I.D.s beginning with X' indicates TCLP Extract. % Solids for Sample : 100.0000 Date Sampled: 4/1/98 SDG No.: APR02 Lab Receipt Date: 4/1/08 QC Report No.: SD040298.RPT Matrix: Water Soll Siudge Other

Elements identified and Moseured

Concentration Units: mg/L

Analyte	Concentration	0	N	V		_	0	<u> </u>	_		M
Aluminum	0,9000	Ū	╄				<u>~</u>	-			
Antimony	0.3000	Ü	╁┷	~~~		,	~~~	~~~			<u>P</u>
Arsenic	0.3000	U	-								P
Barlum			ł~~			٠			44		P
Beryllium	0.1653	В	ļ.,								P
Cadmium	0.0150	<u>U</u>	ļ								P
Calcium	0.0600	U.	۰.,								P
Chromium	666.4770		L			E					P
Cobalt	0.1500	U	L								P
Copper	0.2049	В	<u> </u>								P
ton	0,3000	U	ļ								P
lead	0.6000	U			-						F
Magnesium	0.2400	_U_	<u>_</u>								B
Manganese	4.7565	B	L_								[7
Molybdenum	1.0905	В									*
Nickel	0.1500	U									P
Phoephorus	0.1500	Ü									P
Selenium	2.7762	B									P
	0.3600	U									p
Silver	0.0900	Ū									P
trontium	1.6764	B	_								P
halium	0.3000	7									P
danium	0.0600	Ü	-								P
/anadium	0.2400	Ü								-1	P
inc	0.8130	В									~~ p ~~
	0.0130	-4									<u>, h</u>

Color Before:

White

Clarity Before: Cloudy

Color After:

Coloriess

Clarity Afler:

Texture;

Artifacts:

Fine mesh white solids left on TCLF Fifter.

Comments:

Sample = 100 % solids. Pressure fibration of the TCLP solids extract through a standard TCLP pressure filtration unit, containing a 0.7 micron borositicate glass fiber filter, were performed



AFK-20-98 MON 13:13 AFK-20-98 MON 13:18

FORM 1A-1

INORGANIC ANALYSIS DATA SHEET

Lab Name: Building 559 PA inorganic Laboratories Sample No.: 9 Lab Sample ID: X-98A1508-008 Bidg 910 Paint Chips Sample Section: **ICPAES** Lab Sample I.D.s beginning with X' indicates TCLP Extract. % Solids for Sample : 100,0000 Date Sempled; 4/1/98 8DG Na. : APR02 Lab Receipt Date: 4/1/98 QC Report No.: 8D040298.RPT Matrix; Water Soil Sludge Other

Elements identified and Measured

Concentration Units: mg/L

Analyte	Concentration	-6			_	ō	٥	_	-	M
Aluminum	0.9000	Ü					****		****	- "P"
Antimony	0.3000		_							P
Ansenia	0,3000									P
Badum	0.3027	13	-					~~		P
Berytlium	0.0150	ij								P
Cadmium	0.0600	Ü		·					···	
Calcium	647,2161	- <u>B</u>	-		Ę					P
Chromium	0.1500	U			-	•		-		P
Cobatt	0.1500	 i-	 			_				P
Copper	0,3000	-ŭ-	-							Þ
fron	0.6000	- ü								P
Lead	0.2400	Ü	 -				~~~	_		6
Magnesium	6.2916	B	 			***				P
Mangenose	0.0300	Ü		-						P
Molybdenum	0.1500									P
Nickel	0.1600	i		-74	*****					F
Phosphorus	1.5000	U				-		٠		P
Belenium	0.3600	Li								
Silver	0,0900	Ü								
Strontium	1,1253	E								듁
Thallium	0.3000									P
Tltanium	0.0600	U								P
Vanadium	0.2400	ü								P
Zinc	0.3000	-ŭ-	<u> </u>							
	0.3000									P

Color Before:

White

Clarity Before: Cloudy

Color After;

Coloriesa

Clarity After:

Clear-

Texture:

Artifactes

Fine mesh tan solids left on TCLP Filter.

Comments:

Sample ≈ 100 % solide. Pressure filtration of the TCLP solide extract through a standard TCLP pressure filtration unit, containing a 0.7 micron boroaliticate glass fiber filter, was performed to obtain the TCLP final sample extract.

Section:

Date Sampled:

FORM 1A-1

INORGANIC ANALYSIS DATA SHEET

Lab Name: Building 559 PA Inorganic Laboratories Lab Sample ID: X-98A1506-010 Bldg 910 Paint Chips Sample

ICPAES

Lab Sample I.D.s beginning with

Sample No.:

X' indicates TCLP Extract.

10

% Solids for Sample : 100.0000

4/1/98 SDG No.: APR02

Lab Receipt Date: 4/1/98 QC Report No.: SD040298.RPT

Matrix: Water Soil Sludge Other

Elements identified and Measured

Concentration Units: mg/L

Analyte	Concentration	C	NV * E O Q 8 +	M
Aluminum	0.9000	-1		P
Antimony	0.3000	Ü		p
Areenic	0.3000	-	 	
Barium	2.6214	B		P
Beryllum	0.0150	บั		<u></u>
Cadmium	0.0600	Ü		P
Calolum	201,6300	- B	E	~~ ` `
Chronium	0,2622	В		 -
Cobatt	0.1500			-
Copper	0.3000	- ŭ -		- F
Iron	0.6654	-8		
Lead	0.2400	ű		<u>F</u>
Magnesium	2,6596	В		P
Manganese	0.5082	B		
Molytroenum	0.1500	- ü -		~ [-
Nickel	0.1500	- u		P
Phosphorus	4,1808	<u>B</u>		- P
Selenium	0,3800			- F -
Stiver	0,0900	- U		- F
Strontium	0.1718	-B		- P -
Thallium	0.3000	ü		ř
Titanium	0.0800	Ü		- F
Vanedium	0.2400	- u		P
Zinc	3,2523	B		P
	U,ALES			

Color Before:

White

Clarity Before: Cloudy

Golor After:

Coloriess

Clarity After: Clear

Texture:

Artifacts:

Fine mesh brown sollds left on TCLP Filler.

Comments:

Sample = 100 % saileds. Pressure filtration of the TCLP solids extract through a standard TCLP pressure filtration unit, containing a 0.7 micron borostilicate glass fiber filter, was performed

FORM 1A-1

INORGANIC ANALYSIS DATA SHEET

Lab Name: Bullding 659 PA Inorganic Laboratories Sample No.: 11 Lab Sample ID: X-98A1506-011 Bidg 910 Point Chips Sample Section: **ICPAES** Lab Sample (.D.s beginning with X' indicates TOLP Extract. % Solids for Sample : 100.0000 Date Sampled: 4/1/98 SDG No. : APR02 Lab Receipt Dete: 4/1/98 QC Report No.: SD040298.RPT Matrix Son Sludge Other

Elements Identified and Measured

Concentration Units:

	Antraumation Filial:	mgn,	N V * E O O S +	
Analyte	Concentration	C	T	M
Aluminum	0.9579	В		
Antinony	0.3000	Ü	 	D C
Arsenic	0.3000	Ū		P
Bartum	3.5580	В	 	P
Berylium	0.0150		 	- -
Cadmium	0.0600	- ŭ-	-	
Caldum	170.4663	B		- 6
Chromium	0.1500	- P	E	P
Cobalt	0.1500		<u> </u>	P
Copper	0.4947	U B	<u> </u>	F
run)			P
₽ad	1,4508	. 8		P.
Magnesium	0.2400	Ų		F
Manganese	2.0438	<u>B</u>	J	P
Molybdenum	0.1302	В		F
Vickel	0.1500	U		þ
hosphorus	0.1500	U		P
mulnetas	3,6291	₿		p
ilver	0.3600	U		P
trontium	0.0900			Ħ
hallium	0.1080	_8_		ρ
tanium	0.3000	U		P~
/anadium	0.0800	U		_ <u>`</u>
inc	0,2400	u,		- <u>-</u> -
.HILL	1.9308	8		P
				<u> </u>

Color Before:

White

Clarity Before: Cloudy

Ctear

Color After:

Coloriess

Clarity After:

Texture:

Artifacts:

Fine mesh brown solids left on TCLP Filter.

Comments;

Sumple = 100 % solkls. Pressure filtration of the TCLP solids extract through a standard TCLP pressure filtration unit, containing a 0.7 micron bornaliticate glass fiber filter, was performed



BLDG 881 KOOM 112 KAD LABS

P. 14 r. 14

FORM 1A-1

INORGANIC ANALYSIS DATA SHEET

Lab Name: Building 559 PA Inorganic Laboratories Sample No.: 12 Lab Sample ID: R BLANK#1 Delonized Water Preparation Blank Section: **ICPAES** Lab Sample LD.s beginning with X' indicates TCLP Extract. % Solids for Sample : < 0,5000 Date Sampled: 4/2/98 SDG No. : APR02 Lab Receipt Date: 4/2/98 QC Report No.: 6D040298.RPT Matrix: Water Boil Sludge Other

Elements Identified and Measured

Concemision Units:	mg/L								
		N	V	*	E	O	0	S	+

	Antioning and Dilital	BIGAL				_	_	_	_		
Analyte	Concentration	C	N	<u>v</u>	. *	Ę	Q	0	S	+	M
Aluminum	0.3000		╂	-			ч.				1
Antimony	0.3000		├								P
Arsenia			┡								P
Barium	0,1000		1								P
Beryllium	0,0500		!								P
Cadmium	0,0050		<u>_</u>								P
Calcium	0.0200		<u> </u>								P
Chromium	0.2000	u	L								P
Cobalt	0.0500		_								P
	0.0500		Ι.						.,		P
Copper	0.1000	U									P
lron	0.2000	U	Г								Р
Lead	0.0800	υ							,	-	P
Magneslum	0.2000	V		_							P ~
Manganese	0.0100	U	1								P
Molybdanum	0.0500	U	1								P
Nicket	0.0500	Ü	 -								P
Phosphorus	0,5000	Ü	\vdash					*****			- - -
Salenium	0.1200	ŭ	\vdash								-F
Silver	0.0300	~~	-								P
Strontium	0.0100	 ii	\vdash		<u>u</u> _						
Thallium	0.1000		-								P
Titanium	0.0200	U	<u> </u>				~~~				P
/anadium .	0.0200										P
Zinc	1	U							,		P
	0.1000	U	<u></u>						_		Р
			L								

Color Before:

Coloriese

Clarity Refore: Glear

Color After:

Colodess

Clarity After:

Clear

Texture:

Artifacts:

Nothing left on TCLP Fitter.

Comments;

Sample < 0.50 % solids. Therefore, the filtered sample is taken to be the final TCLP extract. Pressure tiltration of the initial sample through a standard TCLP pressure filtration unit. containing a 0.7 micron barosificate glass fiber filter, was performed to obtain the final TCLP filtered sample extract.



INORGANIC ANALYSIS DATA SHEET

Lab Name: Building 559 PA Inorganic Laboratories SAMPLE NO. 13 Lab Bample (D; EPA QC-21 Standard Section: **ICPAES** Lab Sample I.D.s beginning with X' Indicates YCLF Extract. % Solids (0 - N/A) : 0.0000 Date Sampled: 4/8/98 LON DOB APRO2 Lab Receipt Date: 4/6/98 QC Report No.: SD040298.RPT Matrix: Water Soil Sludge Other

בווע ספו אטטון 112

RAD LABS

Elements Identified and Measured

Concentration Units: (mg/L)

Analyte	Concentration	Ċ	O	M
Akıminum				P
Antimony	3.9347	В		P
Arsanic	3.9510	В		P
Barium			† 	P
Beryllium	3,8339	В		P
Cadmium	3.7950			P
Calcium	4.5540	В		1 - i-
Chromium	3,6547	B		
Cobalt	3.7192	- <u>-</u> -		P
Copper	3.7675	В	·	P
Iron	4.1617	8		
Lead	3,8064	8		P
Magnesium	4.3149	B	1	P
Manganesa	3,9123	B		P
Molybdenum	3.7571	B		P
Nickel	3,8893	B		P
Phosphorus				i p
Selenium	3,7991	****		P
Silver				
Strontium	3.8002	B		P
Thallium	3.5419	В		þ
Titanium	3,8535	В	***************************************	
Vanadlum	3,8266	B	<u> </u>	
Zinc	3.7875	B		P
		<u> </u>	1	 `

Color Before: Color After:

Ciarity Before: Clarity After:

Texture:

Artifacts:

Comments:

Sample = 0.00 % Solids. Total Metals Digestion only! EPA QC-21 Trace Metals Aqueous Reference Standard.

(External Control Standard).



MORGANIC ANALYSIS DATA SHEET

Lab Name: Bullding 559 PA Inorganic Laboratories SAMPLE NO. 14 Lab Sample ID: EPA QC-7A Standard Section: **ICPAES** Lab Sample I.D.s beginning with X' indicates TCLP Extract. % Solids (0 - N/A) : 0.0000 Date Sampled: 4/6/28 BDG No.: APR02 Lab Receipt Date: 4/6/98 QC Report No.: SD040298.RPT Matrix: Water Soil Other Sludge

Elements Identified and Measured

Concentration Units: (mg/L)

Analyte	Concentration	C	Q	M
Aluminum	4,0003	В	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	Р
Antimony				P
Arsenio				P
Barium	3.7957	8	· · · · · · · · · · · · · · · · · · ·	P
Beryllium				P
Cadmium		~ -		P
Calcium				P
Chronium				j
Cobalt	7 			P
Copper				
Iron				P
Lead				
Magnesium			<u> </u>	
Manganese				~~
Molybdenum	~ ~~~}.	···		
Nickel				
Phosphorus				
Selenium				
Silver	1,8206	В		P
Strontium	JOSON			P
Thallium	" 		——————————————————————————————————————	
Titanium				
Venadium				P
Zinc				- Н
		~		P

Color Before: Color After:

Clarity Before: Clarity After:

Texture:

Artifacts:

Comments:

Sample = 0.00 % Solids. Total Metals Digestion only!

EPA QC-7A Trace Metals Aqueous Reference Standard.

(External Control Standard).



Kad labs

COVER PAGE

INORGANIC ANALYSES DATA PACKAGE

Lab Name: Building 559 PA Inorganio Laboratories BOYY No.:

7/93

Section:

Comments:

ICPAES

QC Report Number: 6D040298.RPT

SDG No.:

APR02

Sample (D'e	beginning with 'X' are TCLF Ext	rects.		W
nole No.	APO Sample I. D.	Lab 8	ample ID.	-
1	X-96A1506-001	Bidg 910 Paint Chip	s Sample	
2	X-98A1506-002	Bldg 910 Paint Chip	s Sample	
3	X-98A1506-003	Bidg 910 Paint Chip		.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
4	X-98A1506-004	Bidg 910 Paint Chip	e Sample	
5	X-98A1506-005	Bldg 910 Paint Chip	s Sample	
ß	X-98A1506-005 D	Bldg 910 Paint Chip	a Sample Lab D	uplicate
7	X-98A1506-006	Bldg 910 Paint Chip		
8	X-98A1506-007	Bldg 910 Paint Chip		
9	X-98A1506-008	Blog 910 Paint Chir		
10	X-98A1508-010	Bldg 910 Paint Chip		
11	X-98A1506-011	Bidg 910 Paint Chip		· · · · · · · · · · · · · · · · · · ·
12	X-TCLP EXT #1	RCLP Extraction Fi	Id Regnant Blan	k
13	EPA QC #21 STD	EPA QC #21 Aqueo	us I shorstory Co	NAME STREET
14	EPA QC #7A STD	EPA QC #7A Aque		
			994	
			4 114	
ro ICP Inter-eli	ement Corrections applied?		Yeb/No	Y
	ement Corrections applied?		Yeb/No Yes/No	
re ICP Backgr		No.'s listed above.		Y
re ICP Backgr ve reviewed ti nature:	ound Corrections applied?	No.'s listed above.	Yea/No	Y
re ICP Backgr	ound Corrections applied?	No, a listed above. Title:		Y



P. 02 P. 11

X

COYER PAGE

INORGANIC ANALYSES DATA PACKAGE

Lab Name:

Building 559 PA Inorganic Laboratories

SOW No.:

7/93

Section:

ICPAES

QC Report Number: 8D040398.RPT

8DG No.:

APR03

Lab Sample ID's baginning with "X" are TCLP Extracts.

Sample No.	APO Sample I. D.	Lab Sa	mple ID.	
1	98A1508-001	Bldg 910 Paint Chips	Sample	
2	98A1506-001 D	Bidg 910 Paint Chips	Sample Lab	Duplicate
3	98A1508-002	Bldg 910 Paint Chips		
4	98A1506-003	Bldg 910 Paint Chips		
5	98A1506-004	8ldg 910 Paint Chips	Sample	
6	98A1506-005	Bldg 910 Paint Chips		
7	98A1506-00B	Bidg 910 Paint Chips		· · · · · · · · · · · · · · · · · · ·
8	98A1508-007	Bldg 910 Paint Chips		
8	98A1506-008	Bidg 910 Paint Chips		
10	96A1506-009	Bidg 910 Paint Chips		
11	98A1506-010	Bidg 910 Paint Chips		
12	98A1506-011	Bldg 910 Paint Chips		
13	R BLANK #1	Delonized Water Pre		
14	ERA540-235 STD	ERA540-235 Solid La		
Were ICP Inter-ele	Ament Corrections applied?		Ces/No	Y
	ound Corrections applied?		res/No	Y
	Authoritoria alifatetta	i de la companya de la companya de la companya de la companya de la companya de la companya de la companya de La companya de la co	res/NO	Ť
I have I lowed if	he following data for the Sample	No.'s listed above.	Transfer	
Signati.:		J. 100 100 100 100 100 100 100 100 100 10	la Si	- stryagmen - 100 m
a ignativ.				
Date:	4-16-98	Title: /	Inalytical Cf	emist
	11			
Signatura;	Morrito	mass		
Date:	14-20-	7 (tigs:	Reviewer	The secretary of the second of
			de stamen	The state of the s
				graffer and the

Comments;

4/20/88 APC again 4/22/98

250

APR-22-98 WED 11:54 BLDG 881 ROOM 112 APR-22-98 WED 10:02 RAD LABS

FORM 1A-1

INORGANIC ANALYSIS DATA SHEET

Lab Name:	6	Building 559 PA Inorga	anio Laboratories		Sample No.:	
Lab Sample ID:	28A1506-	001	Bldg 910 Pal	int Chips Sample		 -
Section:	;	ICPAES			npie I.D.s beginning wi nes TCLP Extract.	lh
% Solids for Bar	pbje :	100,0000				
Date Sampled:	÷.	4/1/98 -		SDG No. :	APR03	
Lab Receipt Dat	e:	4/1/98		QC Report No.:	&D040398,RPT	
Matrix:	Water Soll Sludge					
	Other	X				

Elements Identified and Measured

mg/Kg Concentration Units:

Analyte	Concentration	C	Q	M
Juminum .	2184,5841	B		þ
atknony	9.9330	U	5.70	P
Arsenio	9,9330	U		P
Barlum .	4461.3658		n el gefe nincia	P
Beryllium	0,4966	U		P
Cadmium	7-7.4100	В		P
Calcium	15668.8155	В	The process of the control of the co	P
Chromium	314,1495		17 × 3 × 5	Þ
Cobalt	20.8294	B	ranjan men	P
Copper	1488.6125	В	N	P
ron	49058,6874	В	E	P
Lead	3233,9210			Р
Magnesium	3633,2655	- B	10 March 1997	P
Manganese	404.5195	В		P
Molybdenum	9.2873	8		P
Nickel	83,5282	B		P
Phosphorus	524,5096	В		P
Selenium	11.9195	U		P
Silvot	2.9799	U		P
Strantium	76.4937	B		P
hallium	26,2297	В	N	P
tanlum	75,8494	В	E	P
ınadium	7,9464	ับ		P
ino	276,2255	13		P
	• 1 <u>1</u>	F 7 2		

ADIDI CELOIG.	Cupicas	Clarity Buttire:	Gear
Color After;	Yellow	Clarity After:	Clear
Texture:	Ž.		
A.tifacts:	<u> </u>		
Comments:	{ Sample = 100,00 % Solids	. Total Metals Digestion only !	A family of the second

INORGANIC ANALYSIS DATA SHEET

Lab Name:		Building 559 PA Inorg	panic Laboratories	:	Sample No.: 2
Lab Sample (D:	SA1508-00	ם א	Bldg 910 Pair	nt Chips Sample Lab D	uplicate
Section:	and the second s	ICPAES			ole I.D.s beginning with es TCLP Extract.
% Solids for San	ubje :	100,0000			
Date Sampled:	1	4/1/98		SDG No. :	APR03
Lab Receipt Det	e:	4/1/98		QC Report No.:	5D040398.RPT
Matrix:	Water Soil Sludge				
	Officer	X		ا الله المستقدة الأساسة الأستانية الأستانية الأستانية الأستانية الأستانية الأستانية الأستانية الأستانية الأستان	ديد وييس بد د سه ساد

Elements Identified and Measured

Concentration Units: mg/Kg

Analyte	Concentration	····C	7		_		0					M
Aluminum	2184,9926	<u> </u>	┰									p
atimony	8.5256	$-\bar{\overline{u}}$	-			~~~	-	-				P
seniç	14,9280	В	-	-								P
arlum	5116.1266		╀┈				- , -				-	-
eryillum	0.6055	В	1					-		_		P
Gadmlum ·	5.8164	В										-
Calclum	15392,1092	В	1	1.835.1				, , ,				,
Chromium	333.2705	·	١.									þ
Cobalt	19,8313	В	-	i tyre		•	-		-			P
Copper	1339,7022	- B -	N				<u> </u>	<u> </u>				P
iron	47553.9454	- B	"			É						Þ
Lead	\$468,3970		┢									P
Magnesium	3835.3449	- B a	┢╌									P
Mangareso	378.6203	В	╌			-	<u> </u>			·		-F
Molybdenum	10,4417	В	-			1 1 1					1	P
Nickel	84.0496	В	-	1.1		-	<u> </u>				1	P
Phosphorus	580.2678		┢╌			· · · · · · · · · · · · · · · · · · ·					}	— -
Selenium	11.9107	- -	┞~									P
Silver	2.9777	- U	├									P
Strontium	81,3300	B-	-								1	
Thallium	26.3524	В	N			····					_	P
Itanium	76,9727	- B	12			_						P
Vanadium	7.9404		<u> </u>			E				,		P
ino	424,2779	B	 									<u> </u>
	424.2718		 								1	P

	fix: (Marine Control of the Control				
Calor Before;	easholc	Clarity Before:		s, a res	,
Color After:	rellow	Clarity After:	Clear	g grigories	er.
Texture:	e e e e e e e e e e e e e e e e e e e	e de la composition de la composition de la composition de la composition de la composition de la composition La composition de la		nide 18	
Artifacts:	:	· 1년 - 국			*****
Comments:	Sample = 100.00 % Solids. To	tal Metals Digestion only I	The same of	24. 4	* * *



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FORM 1A-1

INORGANIC ANALYSIS DATA SHEET

Building 559 PA Inorg	anic Laboratories	1	Sample No.:	3
002	Bidg 910 Paint Chips S	ample		
ICPAES				vilh
100.0000				
4/1/98	SDG I	No. :	APR03	
4/1/96	QC R	eport No.:	,SD040398.RPT	
<u>x</u>	·			
	100.0000 4/1/98	100.0000 4/1/98 SDG I 4/1/96 QC R	OO2 Bidg 910 Paint Chips Sample ICPAES Leb Samp X' indicate 100.0000 4/1/98 SDG No.: QC Report No.:	O02 Bidg 910 Paint Chips Sample ICPAES Lab Sample I.D.s beginning v X' indicates TCLP Extract. 100.0000 4/1/98 SDG No.: APR03

Elements Identified and Measured

Concentration Units: nig/Kg N V * E O O S

Analyte			NV EOOS+	
Alexaler	Concentration	C	Q	M
Aluminum	3463.6842	₿		þ
Antimony	9.9305	U.	ere k	P
Arsenio	9.9305	U.		P
Barium	133.9424	B	to a version of the	P
eryllium	0.4965	U		P
admium	2,7507	В		P
alcium	2891.5988	В	nor enclared exercises of a grown makes on a decision	P
Chrombun :	5084.4568		A Brown of the same	P
Cobalt	260.3774	В	n contract	P
Copper	504.8971	B	N	P
ron	4225.7696	В	E	P
Lead	3000,6852	***		P
Magnesium	896.7329	Br.		P
Manganese	50.2681	В		P
Molybdenum	4.9652		And they remain the second of the second	P
Nickel	8.9672	В		P
Phospt.orus	4530.6554	В		P
Selenium	11.9166	ับ		- P
Siver	2.9791	Ü		P
Strontium	15,2334	В		P
Thallium	9.9305	U	N .	P
Titanium	403.4856	B	E E	p
Vanadium	7.9444	- ü		- - -
Zinc	6859,5730	8	*	P
	0035,0700		 	
		1111	1	1

Color Before:	Coloriess	Clarity Before: Clear
Color After:	ellow	Clarity After: Clear
Texture:		en en en en en en en en en en en en en e
Artifacts:	* T	
Comments:	Sample = 100.00 % Solids	. Total Metals Digestion only !



INORGANIC ANALYSIS DATA SHEET

Lab Name:		Building 559 PA Inorganic Laboratories		:	Bample No.:
Lab Sample ID:	98A1506-4	003	Bidg 910 Pal	nt Chips Sample	
Sections		ICPAES	Lab Sample I.D.s beginn X' Indicates YCLP Extrac		
% Solids for San	nple:	100.0000			
Date Sampled:	1	4/1/98		SDG No.:	APR03
Lab Receipt Date	P.	4/1/98		QC Report No.:	6D040398.RPT
Matrix:	Water Soil Siudge Other	X		e in end in a	يوه أنسان ده

Elements kientified and Measured

Concentration Units: mg/Kg

0 1 6 **883 865 - O**K 6441

Analyte	Concentration	C	Q	1/4
Aluminum	813.7711	В		Р
Antimony	9,9502	Ü		P
Arsenio	16.4677	В		P
Bariom	158,4677	B	and the second s	Þ
Boryllium	0,4975	U		P
Cadmium	8.9552	В		P
Celcium	15935.1244	В	- Company of the contract of t	P
Chromium	87,1144	B·	New Markey Control of the State of the Control	P
Cobalt	259.7413	В	a superior and the superior of	P
Sopper	270.9066	В	N	P
ron	87745.1741	B	E	P
Lead	115,8308			P
Magnesium	1382.6866	В		P
Manganese	597.7512	В		Р
Molybdenum	11,1741	В	* 1 to 1	P
Nickel	101.0746	В		Р
Phosphorus	392.0398	В		P
Selentum	11.9403	U		P
Silver	2.9851	U		Р
Strontium	25.8905	В		P
Thellum	29,2836	В	N	Р
Titanium	52.1294	В	E	P
Vanadium	7.9602	Û		P
Zinc	263.6522	В	•	P
	in the	11 14		

Calar Before:	Coloriess	Clarity Before:	Clear	The same of	
	Ì	7.7	7. 1	5.3573	
Color Alter:	Yellow	Clarity After:	Clear		
	1		7.77	1.00	
Texture:		mary 1 to		10.1	
	. 1	1	1.35		
Artifacts:		.00			
Comments:	Sample = 100,00 % Solids	. Total Metals Digestion only I			



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FORM 1A-1

INORGANIC ANALYSIS DATA BHEET

Lab Name:	ją.	Building 659 PA Inorp	anic Laboratories	;	Sample No.:	
Lab Sample ID:	98A1506	-004	Bidg 910 Paint Chips S	ampia		
Section:	*	ICPAES			ole I.D.s beginning as TCLP Extract.	with
% Solids for Sar	nple :	100,000				
Date Sampled:		4/1/98	SDG	Nó. :	APR03	
Lab Receipt Date	B) .	4/1/98	QC R	eport No.:	8D040398.RP1	•
Matrix:	Water ¥oli £audge Other			4.0		_
			the MO. B	13 538 8)	

Elements Identified and Messured

concentration units:	mg/Kg							
		K.	17	*	~	\sim	E)	

Analyta	Concentration	c	NV EOOS+	M
Aluminum	2002.3576	_ _	<u> </u>	
Arttimony	9.9478	ี้		
Arsenio	9.9478	Ü		P-
Badum	688.1328	B		P
Beryllium	0.A974	- 5 -		
Cadmium	1.9896	Ü		
Caldum	11467,2668	В	Control of the State of St. Congress was not to be \$10.	1-5-
Chromium	1067.7543			
Cobalt	422.0343	В	Strategy (1986)	
Copper	47.7195		N	
iron	20073.3449	B	E	F
Lead	149.0276			
Magnesium	820,4526	В		
anganese	48.0279	В		P
olybdenum ·	4.9739	บ้	<u> </u>	P
[dke]	9.7488	В		P
hosphorus	1348.4810	В		P
Selenium	11.9373	ヷ		F
Silver	2.9843	Ū		P
Strontlum	22.0045	В		P
Thállium	20.8008		N	P
Titanium	348.4208	B	E	p
Vanadium	7.9582	U	<u> </u>	P
2ing	1857,1002	В		P
	1001.1002	~		

Color Before:	Coloriess	Clarity Before:	Clear	C. Harris	
Color After:	Yellow	Clarity After:	Clear	. Lastery	
Texture:		er en en en en en en en en en en en en en	an all an al	Control Barberton	
Artifacts:					
Comments:	Sample = 100.00 % Solids	. Total Metale Digestion only !		20 - 10 - 10 - 10 - 10 - 10 - 10 - 10 -	*

INORGANIC ANALYSIS DATA SHEET

Leb Name:		Building 559 PA Inorge	Building 559 PA inorganic Laboratories		Bample No.:	
Lab Sample ID:	98A1508	-005	Bldg 910 Paint Ch	ips Sample		
Section:		ICPAES			iple I.D.s beginning tes TCLP Extract.	with
% Soilds for Sar	npla ;	100,0000				
Date Sampled:		4/1/98	s	IDG No. :	APR03	
Lab Receipt Dat	e;	4/1/08	c c	Report No.:	8D040398.RP1	Γ
Matrix;	Water Soli Sludge	-		Mandalana proprio de la compansa de		
	Other	×			a thomas to a	

Elements Identified and Measured

Concentration Units: mg/Kg

Analyte	Concentration	C	Q	M
Alumhum	2518.4734	B		P
Antimony	9.9133	U		P
Arsenic .	9.9133	U		P
Barium	490.6964	В		P
Beryllium	0.4957	U		P
Cadmium	1.9827	U		P
Celcium	1686.2677	В	Company of the Compan	P
Chromium	9256.0694		A CONTRACT OF STREET	P
Cobalt	272,5254	В	t togyther of the state of	P
Copper	15.5737	В	N	P
เวก	16943,1772	В	E	P
Lead	68510.8302			P
Magnesium	845.8704	. B :	the state of the s	P
Manganese	74.4486	В		P
Molybdenum	9.1996	В		P
lckel	11.1227	В		P
iloaphorus	481,6059	В		P
alenium	11.8959	U		P
filver	2.9740	Ü	•	P
Strontlum	9.1698	В		P
Thallum	30.7608	В	N	P
Itanium	490.4882	В	E	P
Vanadium	7.9306	U		P
Zinc	544.9715	В		P
	1 1 12	1 103	 	

VV	w.	OF	ŲΓ	υ.

Coloness

Clarity Before: Clear

Color After:

Yellow

Clarity After:

Clear

Texture:

Artifacts:

Comments:

Sample = 100.00 % Solids. Total Metals Digestion only !

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FORM 1A-1

INORGANIC ANALYSIS DATA SHEET

Lab Name:	1 \$	Building 559 PA Inorga	Building 559 PA Inorganic Laboratories		Bample No.: 7
Lab Sample ID: 86A1506		-00 6	Bidg 910 Paint Chips Sa	ample	
Section:	· · · · · · · · · · · · · · · · · · ·	ICPAES		Lab Sam X' indica	ple I.D.s beginning with les TCLP Extract.
% Solids for Ba		100,0000			
Date Sampled:		4/1/98	8DG N	lo. :	APR03
Lab Receipt Dat	le:	4/1/98	QC Re	port No.:	SD040398.RPT
Matrix:	Water Soli Sludge Other			o.	

NO. 303 898 8 10 Elements Identified and Measured

	Concentration Units:	mg/Kg			_	_	_	_	_		
Analyte	Concentration	C	T T	Y	-	E	o Q	0	8	+	N
Aluminum	3313.9791	B	╁╌								+ "
Antimony	9.9354	Ü	┢╌								1 5
Arsenio	9.9354	u	 		~						P
Barlum	12891.1674		┢╌								1 F
Beryllium	0.4968	Ü	├								
Cadmium	2.2861	В	}⊸							-	P
Calcium	6496.2146		_		(100 -			u infin			
Chromium	29.3393	В									P
Cobalt	7.1734	В	***	i, dia				·			P
Copper	20.5067	8		100	-						P
Iron	1183.0700		N								P
Lead		В	 			E				·	P
Magnesium	55.0025		<u> </u>								P
Manganese	2589.2201	В.,	Ŀ				100				P
Molybdenum	33.0750		L_								р
Nickel	4.9677	U	10%	retign							P
Phosphorus	18.3805	8	L.								P
Selenium	401.3512	B									P
lyer	11.9225	U									P
	2.8806	V									P
rontlum Itallium	118.9568	В									Р
* h	21.5698	В	N					~			P
i tanium	102.1461	B				E					Þ
/anadium	7.9483	IJ ee		4							P
lino	267,7198	В			*						F
	2,476	197,769	_								 '-
			-							****	

Color Before:	Coloriess	Clarity Before: Clear
Color After:	Yellow	Clarity After: Clear
Texture:		The transport of the second second second second second second second second second second second second second
Artifacts;		
Commenter	Sample = 100 00 % Sall- 7-64	April 1 de la companya del companya della companya

INORGANIC ANALYSIS DATA SHEET

Lab Name: Building 559 PA Inorganic Laboratories Sample No.: 8 Lab Sample ID: 98A1506-007 Bldg 910 Paint Chips Sample Section: **ICPAES** Lab Sample I.D.s beginning with X' indicates TCLP Extract. % Solids for Sample : 100.0000 Date Sampled: 4/1/88 SDG No. : APR03 Lab Receipt Date: 4/1/98 QC Report No.: 80040398.RPT Matrix: Water İç& Sludge Other

Elements Identified and Measured

Concentration Units: mg/Kg

003 893 8

Analyte	Concentration .	C	NV E O O S +	M
Juminum	7017,6315	B		P
untimony	0.0726	Ü	., .,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	P
Arsenia		U		P
Barlum	9.9726	 B		1
Beryllum	63.7848 0.4988	₩-		P
Cadmium				- P
	1.9945	Ŋ		
Calcium	49164,1685	В	- Manual Comments	P
Chromium	5,9038	B	The STANE STAN SHALLS	4
Cobalt	25.7193	B	part was great and the street was	p
Copper	9,9726	U	N	P
ron	1119.8903	8	E	P_
Lead	13.4131	В	<u> </u>	P
Magnesium	1932.2264	В		P
Manganese	78.1750	B		Р
Molybdenum	4.9863	U	# 1043 TOTAL	P
Nickel	4.9863	Ų	· ·	P
Phosphorus	504,2134	В		P
Selenium	11.9671	u		P
Silver	2.9918	Ų		P
Strontium	71.4934	B		P
l halijum	12.4358	8	N	P
itanium	229,2196	В	E	P
anadium	7,9761	U		P
inc	210.4518	B	1	P

Color Before:	Coloness	Clarity Before	Clarity Before: Clear				
Color After:	Yellow	Clarity After:	Clear	e e dans			
Texture:							
Artifacte;	in M	in the second se					
Comments:	Sample = 100 00 % Solida	Total Metale Dispetion only I					

FAX NO. 303 966 3400 FAX NO. 303 966 2556

INORGANIC ANALYSIS DATA SHEET

Lub Name:		Building 559 PA Inorg		Sample No.:	_8			
Lab Sample ID:	98A1508-	008	08 Bldg 910 Paint Chips Sample					
Section:		ICPAES			nple I.D.s beginning wi des TCLP Extract,	ħ		
% Solids for Sar	nple :	100.0000		·				
Date Sampled:	į	4/1/98		SDG No. :	APR03			
Lab Recoipt Dat	e:	4/1/98		QC Report No.:	\$D040398.RPT			
Matrix;	Water Soil Skidge Other	X						
			\hat{x}, \hat{w}	MO. 803 938 3	t - 10			

Elements Identified and Measured

Concentration Units:

mg/Kg

Analyte	Concentration	C	Q	M
Aluminum	8940.8735	В		P
Antimony	9.9825	U		P
rsenic	12.0190	В		P
arium	95.0037	В	Section Section	P
eryllum	0.4991	U		P
Cadmium	1.9965	U		P
Calolum	121294.0354	B		P
Chromium	21.8817	В	to the state of the second	Р
Cobalt	4.9913	U	And Asset I state have	P
Copper	23.9381	B	N	P
ron	4796.4362	B	E	P
Lead	16.9304	В		P
Magneslum	2771.5698	В	1.00-5-40	P
Manganese	84.0329	В		P
Molybdenum	4.9913	U	10 174, 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	P
Nickel	8.2356	8	100	P
Phosphorus	449.2538	В		Þ
Selenium	11.9790	Ū		P
Silver	2,9948	Ü		P
Strontium	144.8166	В		P
Thallium	24.6169	В	N	P
Ttanlum	447.6167	B	E	P
Vanadium	11.5797	В		P
Zinc	367.1376	В	*	P
	7,00		 	

Color Before:	Pioriess	Clarity Before:	Clear	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Calor After:	Yellow	Clarity After:	Clear	
Texture:	· }	· · · · · · · · · · · · · · · · · · ·		 a supposed to the
Artifacts:	1			THE STATE OF THE S
Commente:	* Sample = 100.00 % Soli	ds. Total Metals Digestion only !		 and the second second
		an in a market pillental tall !		 a comment of the second



FAX NO. 303 966 3400 FAX NO. 303 966 3400

P. 12

FORM 1A-1

INORGANIC ANALYSIS DATA SHEET

Lab Name:		Building 559 PA Inorg	anic Laboratories		Sample No.: 10
Lab Sample IO:	98A1506-00	09	Bldg 910 Paint C	hips Sample	
Section:	4	ICPAES	•		ple I,D,s beginning with les TCLP Extract.
% Solids for San	role:	100.0000			
Date Sampled:	i I	4/1/98		SDG No. :	APR03
Lah Receipt Date	•	4/1/98		QC Report No.:	SD040398.RPT
Matrix:	Water Soil Sludge Other	x			

FAT NO. 808 996 3113 Elements Identified and Measured

	Concentration Units:	mg/Kg	M	v	*	6	n		3 1	5	_		
Analyte	Concentration	C	Ϋ́			_	ā			_		Т	М
Aluminum	3037.4219	В	1					***	-			+	Þ
Antimony	80.9383							_				十	P
Areenia	19,9850		1-									-	P
Barium	151,9061	В	┢			•						十	- -
Beryllium	0.9993		┢	•								一十	'
Cadmium	5.5958		1								·	十	-
alclum	1948.2188		-		re di			-		_		┽	P
hromkim	23348,2088		1								<u> </u>	\dashv	P
ਂ obalt	170.5321	В									V	+	- F -
copper	25.0212		N						3.50			-	P
iron	33371,4114		 		—	Ē			·····	_	-	╌┼	- 6-
Lead	143.5324		⊢									ᅪ	
Magnesium	6217.2371	i	╌									-	
Manganese	234.4242	В	-									-	- <u>-</u> -
Molybdenum	9.9925		 									-	P
Nickel	9.9926	Ü	-	-11-					<u> </u>				 -
Phosphorus	47914.2643		ļ							_		-	P
Selenium	23.9820		-							_			
Silver	5,9955		 									╼╂-	P
Strontium	41.3090	В	<u> </u>							_			- <u>F</u> -
Thallium	19.9850	-	N	••••									- <u>F</u> -
Titanium	36.9323		113			E						┿	- P
Venadium	15.9880	-6-	-	-						_		-	P
Zinc ·	74491,7112	8	-		•							-	P -
	1778(.) (12	P	├									+	<u></u>
	<u> </u>											_	

Color Before:	Colorless	Clarity Before:	Clear	The second	• •
Color After:	Yallow	Clarity After:	1 1 1	June 1	
Texture:				to a service	
Artifacts:		and the second		: 	
Comments:	Sample = 100.00 % Solids	. Total Metals Digestion only !			



FAX NO. 303 966 3400 FAX NO. 303 988 2558

P. 13 1,72

FORM 1A-1

INORGANIC ANALYSIS DATA SHEET

LAD Name:		Building 669 PA Inorganic Laboratories			Sample Na.:	11
Lub Sample ID:	98A150B-	110	Bidg 910 Paint (Chipa Sample		
Section;		ICPAES			ole LD.s beginnin es TCLP Extract	g With
% Golids for San	npls:	100.0000		•		
Date Sampled:	64 64 1:4:	4/1/98		SDG No. :	APR03	
Lab Receipt Date	4	4/1/98		QC Report No.:	\$D 0 40398.RP	т
Matrix:	Water Soli Sludge	\$*************************************				
	Other	X	10 P4F	• • • • • • • • • • • • • • • • • • •		

Elements Identified and Messured

1 /4 NO. 303 888 3 D

Concentration Units: mg/Kg

N V * E O O S + Analyte Concentration M Aluminum 34628,1078 P В Antimony P 9,8936 Ü. Arsenic P B 12.8914 Barlum 250.8830 B p Beryllium 0.4947 Ū P Cadmium 1.9787 Ü P Calcium 93209,7947 P В Chromium P 8.0534 B 18.30 Cobalt P 4,9468 U Copper 9.8936 Ū P ron 515.8866 8 P Lead P 17.5315 B Magnesium 1934,4249 ₿ . P Manganese P 19,3619 B Molybdenum F 4.9468 Ū Nickel 4.9468 Ū F Phosphorus 2304.4175 В P Selenium P 11,8724 u Silver P 2.9681 U Strontium 55.0878 B P Thallirm 26.5150 P 8 Titanium 38.3379 B Ę Vanadium 7.9149 Ū P Zino P 826,2083 8

Color Before:	Colorless	Clarity Before:	Clear
Color Afler:	Yellow		Clear
Texture:		e general de la companya de la companya de la companya de la companya de la companya de la companya de la comp	A Company of the Comp
Artifacia:		· · · · · · · · ·	entro e e e e e e e e e e e e e e e e e e e
Comments:	Sample = 100,00 % Solids. Total N		



INORGANIC ANALYSIS DATA SHEET

Lab Name: Building 569 PA Inorganic Laboratories Sample No.: 12 Lab Sample ID: 98A1506-011 Bidg 910 Paint Chips Sample Sections **ICPAES** Lab Sample I.D.s beginning with X' Indicates TCLP Extract. % Solids for Sample : 100.0000 Date Sampled: 4/1/98 SDG No.: APR03 Lab Receipt Date; 4/1/98 QC Report No.: SD040398.RPT Matrix: Vater Boll Bludge Other

> 903 938 3 Elements Identified and Measured

Concentration Units: mg/Kg

Amalyte	Concentration	Ċ	Q	M
Aluminum	29175.2462	8		P
Antimony	9.9975	U		P
Arsenic	9.9975	U		P
Barium	74,4614	В	2	P
Beryllium	0,4999	u		P
Cadmium	1,9995	U	.1.	Р
Calcium	90151.1622	В	Company to the company of the compan	þ
Chromlum	6.6983	В	To be Elimin The L. W. Lite	P
Cobalt	4.9988	U	SARAMAN STATE	P
Copper	9.9975	Ü	N	P
ron	292,6068	В	E	P
ead	7.9980	U		P
Magnesium	1637,6606	В	2 A 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	P
Manganese	12.8068	В		P
Violybdenum	4.9988	U	A STATE OF STATE OF STATE OF	P
Nickel •	4,9988	U		P
Phosphorus	2560.4599	В		P
Selenium	11.9970	Ū		P
Silver	2,9993	U		P
Strontium	51.8870	В		P
Thallum	30.5524	B	N	P
Titanium	30,3424	В	E	P
Vanadium	7,9980	U		P
Zinc	771.1372	В		P
	100			

Colorless

Clarity Before: Clear

Color After:

Yellow

Clarity After:

Texture:

Artifacta:

Comments:

Sample = 100.00 % Solids. Total Metals Digestion only !

INORGANIC ANALYSIS DATA SHEET

Lab Name: Building 569 PA Inorganic Laboratories Sample No.: 13 Lab Sample ID; R BLANK #1 Delonized Water Preparation Blank Section: **ICPAES** Lab Sample I.D.s beginning with X indicates TCLP Extract. % Solids for Sample: < 0.5000 Date Sampled: 4/6/98 SDG No. : APR03 Lab Receipt Date: 4/6/98 QC Report No.: SD040398.RPT Matrix Water Soil Sludge Other

> 364 NO. 303 886 3 10 Elements Identified and Measured

Concentration Units: mg/L

Analyte	Concentration		NV * E O O S +	M
Aluminum	0.3000	Ū	 	P
Antimony	0,1000	- ù -		- - -
Arsenic	0.1000	Ü	 	
Barium	0.0500	Ū	 	 P
Baryllun	0.0050	-ŭ-		T P
Cadmium	0.0200	Ū		P
Calcium	0,2000	U	of the state of t	P
Chromium	0.0500	ŭ		P
Cobalt	0.0500	Ü	And Steen Comment of the Steen Steen	P
Copper	0,1000	ŭ	And Andrews Control of the Control	P
Iron	0.2000	Ü		 − −
Lead	0.0800	- u		P
Magneslum	0.2000	Ü		
Manganese	0.0100	Ü	4	1 5
Molybdonum	0.0500	Ŭ	A contract of the second second	1 -
likel	0.0500	Ü		1-5
Frosphorys	0.5000	- ŭ - -		1 6
Edenium	0.1200	~;		P
Siver	0.0300	Ŭ		F
Strontium	0.0100	- Ū		- [
Thallium	0.1000	<u> </u>	 	P
Titanium	0.0200	Ü	 \	- P
Vanadium	0.0800	U		1 5
Zinc	0,1000	- ŭ		P
	0,1000	<u> </u>	 	┽╌

Color Before:	Coloriess	Clarity Before: Clear
Color After:	Coloriess	Clarity After: Clear
Texture:		مردي والمراود والمنافر المنافر والمراود والمنافرة والمنافرة والمنافرة والمنافرة والمنافرة والمنافرة والمنافرة
Artifacts:		e de la companya de la companya de la companya de la companya de la companya de la companya de la companya de La companya de la co
Comments:	Sample < 0.50 % Solids. T	otal Metals Dincellan only I

Sample < 0.50 % Solids. Total Metals Digestion only !

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FAX NO. 303 966 3400 FAX NU. 3U3 8UU 2000

FORM 1A-1

INORGANIC ANALYSIS DATA SHEET

Lab Name: **Building 559 PA Inorganic Laboratories** SAMPLE NO. 14 Lab Sample ID: ERA540-235 Standard, (Metals on Soil) Section: **ICPAES** Lab Sample I.D.s beginning with X' indicates TCLP Extract. % Solids (0 - N/A): 100,0000 Date Sampled: 4/6/98 BDG No.; APR03 Lab Receipt Date: 4/6/98 QC Report No.: \$D040398.RPT Metrix: Water Soil Other Sludge

Elements Identified and Meagured 986 3 10

Concentration Units: (mg/Kg)

Analyte Concentration M Aluminum 3537.8366 P Antimony 23.1626 В P Arsenio 147,2695 p Berlum 160,9693 В P Berythum 47.7942 В Cadmium 116.5626 P Caldum 1701.2541 B P Chromium 47.3345 B P Madco 46.0555 B 9 Copper 55,7982 В P iron 6607.3045 B F Lead 68.9783 B P Magnesium 1457.8887 8 P Manganese 239.6103 B P Molybdenum 88.0440 В P Nickel 114.0445 B P Phosphorus 816.5376 B Selenium 105,6308 Ü p Silver 44.3567 8 Strontium 93.6797 B hellium 38,6310 B P itanium 376.2878 P B nedium 133.3200 8 P inc 852,6005 B P

Calor Before: Color After:

Clarity Before: Clarity After:

Texture:

Artifacts:

Comments:

Sample = 100.00 % Solids. Total Metals Digestion only! CRM020-050 QC Trace Motals Solid Reference Standard. (External Control Standard).

FAX NO. 303 966 2556

P. 02 P. 02

GOVER PAGE

COLD VAPOR AA INORGANIC ANALYSES DATA PACKAGE

Lab Name:

Building 559 PA Inorganic Laboratories

SOW No.:

7/93

Section:

Cold Vapor Atomic Absorption Spectroscopy

QC Report Number: \$0040398,HGT

SDG No.:

APR03

Lab Sample ID's beginning with 'X' are TCLP Extracts.

Sample No.	APO Sample I. D.	Lab Sample (D.
1	86A1506-001	Bldg 910 Paint Chips Sample
2	98A1506-001 D	Bidg 910 Paint Chips Sample
3	98A1506-002	Bida 910 Paint Chips Sample
4	98A1606-003	Bidg 910 Paint Chips Sample
5	98A1506-004	Bidg 910 Paint Chips Sample
6	98A1506-005	Bidg 910 Paint Chips Sample
7	98A1506-006	Bidg 910 Paint Chips Sample
8	98A1506-007	Bldg 910 Paint Chips Sample
9	98A1506-008	Bldg 910 Paint Chips Sample
10	98A1606-009	Bldg 910 Paint Chips Sample
11	98A1506-010	Bidg 910 Paint Chips Sample
12	98A1506-011	Bldg 910 Paint Chips Sample
13	R BLANK #1	Delonized Water Preparation Blank
14	CRM021-100 STD	CRM021-100 Solid Laboratory Control Standard
-		
·		

I have reviewed the following data for the Sample No.'s listed above.

Signature:

Date:

Title:

Analytical Chemist

Signature:

Date:

Reviewer

Comments:



FAX NO. 303 966 3400 FAX NO. 303 966 2556

P. 03

FORM 1A-5

COLD VAPOR AA INORGANIC ANALYSIS DATA SHEET

Lab Name: **Building 559 PA Inorganic Laboratories** Sample No.: 7 Lab Sample ID: 98A1506-001 Bidg 910 Paint Chips Sample Section: Cold Vapor Atomic Absorption Spectroscopy Lab Sample I.D.s beginning with X' Indicates TCLP Extract. % Solids for Sample ; 100.0000 Date Sampled: 4/1/98 SDG No.: APR03 Lab Receipt Date: 4/1/98 SD040398.HGT QC Report No.: Matrix: Water Boli Sludge

Elements Identified and Measured

Concentration Units: (ug/Kg)

N V * E O O S +

Analyte Concentration C Q M

Mercury 263.39 B C

Color Before:

Other

Clarity Before:

Color After:

Clarity After:

Texture:

Artifacts:

Comments:

Sample = 100.00 % Solids. Total Mercury Digestion only !



BLDG 881 ROUM 112 RAD LABS FAX NO. 303 966 3400 FAX NO. 303 966 2556

P. 04

FORM 1A-8

COLD VAPOR AA INORGANIC ANALYSIS DATA SHEET

Lab Name: Building 569 PA Inorganic Laboratories Sample No.: Lab Sample ID: 98A1606-001 D Bldg 910 Paint Chips Sample Lab Duplicate Section: Cold Vapor Atomic Absorption Spectroscopy Lab Sample I.D.s beginning with X' indicates TCLP Extract. % Solids for Sample: 100.0000 Date Sampled: 4/1/98 SDG No. : APR03 Lab Receipt Date: 4/1/98 QC Report No.: SD040398.HGT Matrix: Water Soil Sludge

Elements identified and Measured

	Concentration Units:	(ug/Kg)	1									
			N	V	*	E	0	0	Ś	+		
Analyte	Concentration	C	T-				a				\neg	M
Mercury	229.14	В	T									C
											T	

Color Before:

Other

Clarity Before:

Color After:

Clarity After:

Texture:

Artifacts:

Comments:

Sample = 100.00 % Solids. Total Mercury Digestion only I

FAX NO. 303 966 3400

APR-24-98 FRI 8:05

Artifacts:

RAD LABS

FAX NO. 303 966 2556

P. 05

FORM 1A-5

COLD VAPOR AA INORGANIC ANALYSIS DATA SHEET

Lab Name: Building 559 PA Inorganic Laboratories Sample No.: 3

Lab Sample ID: 98A1508-002 Bidg 910 Paint Chips Sample

Section: Cold Vapor Atomic Absorption Spectroscopy Lab Sample 1.D.s beginning with X' indicates TCLP Extract.

% Solids for Sample: 100.0000

Date Sampled: 4/1/98 SDG No.: APR03

Lab Receipt Date: 4/1/98 QC Report No.: SD040398.HGT

Matrix: Water
Soil
Sludge
Other X

Elements identified and Measured

Concentration Units: (ug/Kg)

N V * E O O S +

Analyte Concentration C Q M

Mercury 197.63 U C

Color Before: Clarity Before:

Color After: Clarity After:

Texture:

Comments: Sample = 100,00 % Solids. Total Mercury Digestion only !

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FAX NO. 303 966 3400

FAX NO. 303 966 2556

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APR-24-98 FRI 8:06

RAD LABS

FORM 1A-5

COLD VAPOR AA INORGANIC ANALYSIS DATA SHEET

Lab Name: **Building 559 PA Inorganic Laboratories** Lab Sample ID: 98A1506-003 Bidg 910 Paint Chips Sample

Cold Vapor Atomic Absorption Spectroscopy

Lab Sample I.D.s beginning with X' Indicates TCLP Extract.

Sample No.:

% Sollds for Sample : 100.0000

Date Sampled: 4/1/98

APR03 SDG No.:

Lab Receipt Date:

4/1/98

QC Report No.:

SD040398.HGT

Matrix:

Section:

Water Soil Sludge Other

Elements Identified and Measured

Concentration Units:

(ug/Kg)

O NV Analyte Concentration Мегсигу 199.50

Color Before:

Clarity Before:

Color After:

· Clarity After:

Texture:

Artifacts:

Comments:

Sample = 100.00 % Solids. Total Mercury Digestion only !

FAX NO. 303 966 3400 FAX NO. 303 966 2556

FORM 1A-5

COLD VAPOR AA INORGANIC ANALYSIS DATA SHEET

Lab Name:	Building &	59 PA Inorganio Laboratories		Sample No.:	5
Lab Sample ID:	98A1506	004 Bldg 91	0 Paint Chips Sample		
Section:	Cold Vap	or Atomic Absorption Spectroscopy		ple I.D.a beginning es TCLP Extract.	g with
% Solids for Sar	nple :	100.0000			
Data Sampled:		4/1/98	SDG No. :	APR03	
Lab Receipt Dat	e:	4/1/98	QC Report No.:	SD040398.HG	π
Matrix:	Water Soil Sludge Other				

Elements identified and Measured

	Concentration Units:	(ug/Kg)									
			N	٧	•	Ε	0	Q	S	+	
Analyte	Concentration	C	Π				Q				M
Mercury	199.80	U									C

Color Before:

Clarity Before:

Color After:

Clarity After:

Texture:

Artifacts:

Comments:

Sample = 100.00 % Solids. Total Mercury Digestion only !



BLDG 881 ROOM 112 RAD LABS FAX NO. 303 966 3400 FAX NO. 303 966 2556 P. 08 P. 08

FORM 1A-6

COLD VAPOR AA INORGANIC ANALYSIS DATA SHEET

Lab Name: Building 559 PA Inorganic Laboratories Sample No.: Lab Sample ID: 98A1506-005 Bidg 910 Paint Chips Sample Section: Cold Vapor Atomic Absorption Spectroscopy Lab Sample I.D.s beginning with X' Indicates TCLP Extract. % Solids for Sample : 100,0000 Date Sampled: 4/1/98 SDG No.: APR03 Lab Receipt Date: 4/1/98 QC Report No.: SD040398.HGT Matrix: Water Soli Sludge

Elements Identified and Measured

Concentration Units: (ug/

(ug/Kg)

			11	 	U_	 -	~	
Analyte	Concentration	С			Q			M
Mercury	198.81	U				 		C

Color Before:

Other

Clarity Before:

Color After:

Clarity After:

Texture:

Artifacts:

Comments;

Sample = 100.00 % Solids, Total Mercury Digestion only !

FAX NO. 303 966 3400 FAX NO. 303 966 2556

P. 09

FORM 1A-5

COLD VAPOR AA INORGANIC ANALYSIS DATA SHEET

Lab Name: Building 559 PA Inorganic Laboratories Sample No.: 7 Lab Sample ID: 98A1506-006 Bidg 910 Paint Chips Sample Section: Cold Vapor Atomic Absorption Spectroscopy Lab Sample i.D.s beginning with X' Indicates TCLP Extract. % Solids for Sample: 100.0000 Date Sampled: 4/1/98 APR03 SDG No.: Lab Receipt Date: 4/1/98 SD040398.HGT QC Report No.: Matrix: Water Soil Sludge

Elements identified and Measured

	Concentration Units:	(ug/Kg)					_	_				
			N	_V.	*	E	0	0	5	_+		
Analyte	Concentration	C					Q				Т	M
Mercury	199.20	U].	C
											I	

Color Bafore:

Other

Clarity Before:

Color After:

Clarity After:

Texture:

Artifacts:

Comments:

Sample = 100.00 % Solids. Total Mercury Digestion only !



BLDG 881 ROOM 112 RAD LABS FAX NO. 303 966 3400 FAX NO. 303 966 2558 P. 10 P. 10

FORM 1A-5

COLD VAPOR AA INORGANIC ANALYSIS DATA SHEET

Lab Name: Building 559 PA Inorganic Laboratories Sample No.: <u>B</u>_ 98A1506-007 Bldg 910 Paint Chips Sample Lab Sample ID: Section; Cold Vapor Atomio Absorption Spectroscopy Lab Sample I.D.s beginning with X' Indicates TCLP Extract. % Solids for Sample: 100.0000 Date Sampled: 4/1/98 SDG No.: APR03 Lab Receipt Date: 4/1/98 QC Report No.: SD040398.HGT Matrix: Water Soil Sludge

Elements Identified and Measured

Concentration Units:

(ug/Kg)

Analyte Concentration C Q M
Mercury 1675.76 B C

Color Before:

Other

Clarity Before:

Color After:

Clarity After:

Texture:

Artifacts:

Comments:

Sample = 100.00 % Solids. Total Mercury Digestion only I



COLD VAPOR AA INORGANIC ANALYSIS DATA SHEET

Lab Name: Building 559 PA Inorganic Laboratories Sample No.: 98A1506-008 Lab Sample ID: Bldg 910 Paint Chips Sample Section: Cold Vapor Atomic Absorption Spectroscopy Lab Sample I.D.s beginning with X' indicates TCLP Extract, % Solids for Sample: 100.0000 Date Sampled: 4/1/98 SDG No.: APR03 Lab Receipt Date: 4/1/98 3D040398,HGT QC Report No.: Matrix: Water Soll Sludge Other

Elements Identified and Measured

Concentration Units:

(ug/Kg)

			17		-	_~_	 	
Analyte	Concentration	C		 		Q		 M
Mercury	199.60	U			-,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			 C

Color Before:

Clarity Before:

Color After:

Clarity After:

Texture:

Artifacts:

Comments:

Sample = 100.00 % Solids. Total Mercury Digestion only !



BLDG 881 ROOM 112 RAD LABS FAX NO. 303 966 3400 FAX NO. 303 966 2558 P. 12 P. 12

FORM 1A-6

COLD VAPOR AA INORGANIC ANALYSIS DATA SHEET

Lab Name: Sample No.: Building 559 PA Inorganic Laboratories 10 Lab Sample ID: 98A1506-009 Bldg 910 Paint Chips Sample Section: Lab Sample I.D.s beginning with Cold Vapor Atomic Absorption Spectroscopy X' Indicates TCLP Extraot. % Solids for Sample: 100.0000 APR03 Date Sampled: 4/1/98 SDG No. : Lab Receipt Date: 4/1/98 QC Report No.: SD040398.HGT

Elements Identified and Measured

Concentration Units:

(ug/Kg)

Analyte Concentration C Q M

Mercury 198,61 U C

Color Before:

Clarity Before:

Color After:

Clarity After:

Texture:

Matrix:

Water Soll Sludge Other

Artifacts:

Comments:

Sample = 100.00 % Solids. Total Mercury Digestion only !

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BLDG 881 ROOM 112 RAD LABS FAX NO. 303 966 3400 FAX NO. 303 966 2558

P. 13 P. 13

FORM 1A-5

COLD VAPOR AA INORGANIC ANALYSIS DATA SHEET

Lab Name: Building 559 PA Inorganic Laboratories Sample No.: __11 Lab Sample ID: 98A1506-010 Bldg 910 Paint Chips Sample Section: Cold Vapor Atomic Absorption Spectroscopy Lab Sample I.D.s beginning with X' indicates TCLP Extract. % Solids for Sample : 100,0000 Data Sampled: 4/1/98 SDG No. ; APR03 Lab Receipt Date: 4/1/98 QC Report No.: 9D040398.HGT Matrix: Water Soll Sludge

Concentration Units:

Elements Identified and Measured

(stalka)

7-14		(420114g)	N	٧	*	E	o	D	s	+		
Analyte Mercury	Concentration	Ċ	L^{-}				Q				Т	M
INMICRITA	6737.47										十	C
			_								工	

Color Before:

Other

Clarity Before:

Color After:

Clarity After:

Texture:

Artifacts:

Comments:

Sample = 100,00 % Solids. Total Mercury Digestion only I

P. 14

BLDG 881 ROOM 112 RAD LABS FAX NO. 303 966 3400 FAX NO. 303 966 2558

FORM 1A-8

COLD VAPOR AA INORGANIC ANALYSIS DATA SHEET

Lab Name: Building 559 PA Inorganic Laboratories 12 Sample No.: Lab Sample ID: 98A1506-011 Bidg 910 Paint Chips Sample Section: Cold Vapor Atomic Absorption Spectroscopy Lab Sample I.D.s beginning with X' Indicates TCLP Extract. % Solids for Sample: 100.0000 Date Sampled: 4/1/98 SDG No.: APR03 Lab Receipt Date: 4/1/98 6D040398.HGT QC Report No.: Matrix: Water

Floments Identified and Measured

Color Before:

Soil Sludge Other

Clarity Before:

Color After:

Clarity After:

Texture:

Artifacts:

Comments:

Sample = 100.00 % Solids. Total Mercury Digestion only t



BLDG 881 ROOM 112 RAD LABS

FAX NO. 303 966 3400 FAX NO. 303 966 2558 P. 15 P. 15

FORM 1A-5

COLD VAPOR AA INORGANIC ANALYSIS DATA SHEET

Lab Name:

Building 569 PA Inorganic Laboratories

Sample No.:

13

Lab Sample ID:

R BLANK #1

Delonized Water Preperation Blank

Section:

Cold Vapor Atomic Absorption Spectroscopy

Lab Sample I.D.s beginning with

X' Indicates TCLP Extract.

% Solids for Sample :

< 0.5000

Date Sampled:

4/21/98

SDG No. :

APR03

Lab Receipt Date:

4/21/98

QC Report No.:

SD040398.HGT

Matrix:

Water Soil Sludge Other

Analyte

Mercury

Elements identified and Massured

Concentration Units: Concentration

(ug/L)

É 0 0 8 M C C U

Color Before:

Clarity Before:

Color After:

Clarity After:

Texture:

Artifacts:

Comments:

Sample < 0.50 % Solids. Total Mercury Digestion only !

BLDG 881 ROOM 112 RAD LABS

FAX NO. 303 966 3400 FAX NO. 303 966 2556

P. 16 P. 16

FORM 1A-5

COLD VAPOR AA INORGANIC ANALYSIS DATA SHEET

Lab Name:

Building 559 PA Inorganic Laboratories

SAMPLE NO.

Lab Sample ID:

CRM021 LCSS Standard, (Motals on Soll)

Section:

Cold Vapor Atomic Absorption Spectroscopy

% Solids (0 - N/A): 100.0000

Lab Sample I.D.s beginning with

X' Indicates TCLP Extraot.

Date Sampled:

4/21/98

SDG No.:

APR03

Lab Receipt Date:

4/21/98

QC Report No.:

\$D040398.HGT

Matrix:

Water

Soli

Sludge

Other

Elements Identified and Measured

Concentration Units: (ug/Kg)

Analyte	Concentration	C	Q	M
Mercury	4314.7			C

Calor Before:

Color After:

Clarity Before: Clarity After:

Texture:

Artifacts:

Comments;

Sample = 100.00 % Solids. Total Mercury Digestion only!

CRM003-050 QC Trace Metals Laboratory Control Solid Reference Standard .

(External Control Standard).

Appendix D.3 Bldg. 910 RLC Chemical Data

Appendix D.3.1.1

Bldg. 910 RLC Chemical Data

Beryllium

Chain of Custody

										* 0 0 c	
COMMOD	COMMODORE ADVANCED SCIENCES	ED	0	CHAIN		ODY/SAMP	99040709 OF CUSTODY/SAMPLE ANALYSIS REQUEST	REQUEST		99Z6172#001	72#001
										-1	of 2.
Collector DAVID FARLER	Cer			-	Confact/Reguester FARLER, DAVE			Telephone No. 303-966-4340	MSIN	FAX	
RIN 99Z6172	72			υ	Sampling Origin 662, 551, 910			Purchase Order/Charge Code	Charge Code		
Project Title					Logbook No.			Ice Chest No.	Te	Temp.	
To (Lab) Joh	Johns Manville				Method of Shipment FEDERAL EXPRESS	9.		Bill of Lading/Air Bill No.	r Bill No.		
Protocol								Offsite Property No.	Zo.		
POSSIBLE SAN	POSSIBLE SAMPLE HAZARDS/REMARKS ** **	IARKS				SPECIAL	SPECIAL INSTRUCTIONS	Hold Time	Total Activity Exemption:	Exemption: Yes	. T . 0%
2	Custaner.			į		1					
Bottle No.	Number	Matrix	Date	Time	Location	No/Type Container	<u>_</u>	Sample Analysis	is	2	Preservative; Packing
99Z6172- 001.001	662-99-03-26-31- B1	FILTER			862	1-FILIER NA		NR61A001 (Beryllium Filter Analysis) [Routine]	sis) [Routine]	None	
99Z6172- 002.001	662-99-03-26-31- B2	FILTER			662	1-FILTER N/A		NR01A001 (Beryllium Filter Analysis) [Routine]	sis) [Routine]	NIA	
99Z6172-	662-99-03-26-31- B3	FILTER			662	1-FILTER N/A		NR01A001 (Beryllium Filter Analysis) (Routine)	is) (Routine)	NIA	
00.000		11.1				AND TOO MAN				None	
9926172- 004.001	662-99-03-26-31- B4	FILIEK			562	I-FILIEK N/F		NR01A001 (Beryllium Filter Analysis) [Routine]	sis) [Routine]	N/A None	
9926172-	551-99-03-26-31- B1	FILTER			551	1.FILTER NIA		NR01A001 (Beryllium Filter Analysis) [Routine]	is) [Routine]	NA	
00:00		1				1	\neg			None	
99Z6172- 006.001	551-99-03-26-31. B2	FILTER			551	1-FILTER N/A		NR01A001 (Beryllium Filter Analysis) [Routine]	sis) [Routine]	N/A None	
99Z6172- 007.001	551-99-03-26-31- B3	FILTER			551	1-FILTER N/A	1	NR01A001 (Beryllium Filter Analysis) [Routine]	sis) [Routine]	N/A None	
Relinged By:	66-1-1	Date/Time	Received By:	1	Brokens 41	Date Time Relingu	Relinquished By:	Date/Tinte R	Received By:		Date/Tine
Minquished By:		Date/Time	Received By:	1			Refinguished By:	Date/Tine R	Received By:		DateTime
Relinquished By:		Date/Time	Received By:	, x		Date/Time Relinqu	Relinquished By:	Date/Time R	Received By:		Date/Time
Redinquished By:		Date/Tine	Received By:	, x		Date/Time Relinqu	Relinquithed By:	Date/Time R	Received By:		Date/Time
FINAL SAMPLE DISPOSITION	PLE Disposal Method (e.g., Return to customer, per lab procedure, used in process)	a.g., Retum to cust	oner, per lab	procedure,	used in process)		Disposed By			Date/Time	
									1		



COMMODORE ADVANCED SC	COMMODORE ADVANCED SCIENCES			CHAIN	OF CUSTO	DY/SAMPL	OF CUSTODY/SAMPLE ANALYSIS REQUEST	99040109C.O.C.#	,0.c.# 99 Z	99Z6172#001
7(0								<u></u>	Page	2 of 2 .
. 99Z6172			٦	Contact/Requestor FARLER, DAVE	cator DAVE		Tetephone No. 303-966-4340	MSIN	1	
Bottle No.	Customer Number	Matrix	Date	Time	Location	No/Type Contained	Sample Analysis	ysis		Prescryative;
99Z6172-	551-99-03-26-31 - B4	FILTER			551	1-FILTER N/A	NR01A001 (Beryllium Filter Analysis) [Routine]	ysis) [Routine]		Packing N/A
0076477	010.00.03.94.94	ADT HE				4 Ett TED NIC				None
009.001	810-88-03-51-51-	בור פט ביי פט	-		840	FILIER NA	NR01A001 (Beryllium Filter Analysis) [Routine]	ysis) [Routine]		NVA
9926172-	910-99-03-31-31- B2	FILTER			910	1-FILTER NIA	NR01A001 (Beryllium Filter Analysis) [Routine]	ysis) [Routine]		None N/A
9978179	910-99-03-31-31-	FILTER			676	1-FILTER NIA				None
011.001	B3	<u>.</u>			o la	יין ורובה ועה	NR01A001 (Beryllium Filter Analysis) [Routine]	ysis) [Routine]		NA
99Z6172- 012.001	910-99-03-31-31- B4	FILTER			910	1-FILTER NIA	NR01A001 (Beryllium Filter Analysis) [Routine]	rsis) [Routine]		NA
99Z6172- 013.001	910-99-03-26-31- BLK	FILTER			910	1-FILTER N/A	NR01A001 (Beryllium Filter Analysis) [Routine]	'sis) [Routine]		None N/A
9976172-	910-99-03-26-31-	FILTER			6	4-FELT TOPR - NVS				None
014.001	05				5	AIR CASSÉTTE	Mtt41A644 (Beryllium Filter Analysis) [Routine]	/sls) [Routine]		N/A
99Z6172- 015.001	910-99-03-26-31- BLK	FILTER			910	1-EUTER MA. AIR CASSUTTE	NR01A004 (Beryllium Filter Analysis) [Routine]	rsis) [Routine]		None N/A
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FINAL SAMPLE DISPOSITION	\vdash	Disposal Method (e.g., Return to customer, per lab procedure, used in process)	order, per lab	procedure, user	d in process)		Disposed By		Date/Time	

(92) RFP F 3791.: Formerly RF

Rocky Flats Environmental Technology Site Golden 80402-0464

Golden 80402-0464
Safety and Hygiene Chain of Ustody Record and Analysis Request

Name of Originator: David	1) EAKLEK Title:	I.H.	Bldg/Ext: 7 / 2/ 3 4/0	1340 Date: 2777cg Page	do , of ,
SAMPLE NUMBER Bidg/Y/M/D/P#/S#	ANALYZE FOR	VOLUME SAMPLE liters TIME/	MEDIA A B	REMARKS	게 뜸투
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5-11-99-03-36-31-151					
551-99-03-26-31-42					
551-99-03-26-21-153					
551-99-03-26-21-154					
810-49-03-21-21-61					
920-99-03-31-21-102					
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	KH	Standard Rush Service	sh Other	Signature.	
DynCorp Bill To:	KH		Asbestos Samples	Comments: Procedure A. Marian	
J	P.O.#/Release: 4/6, 2.2.00/9 /	77	Other		
	124	Service Rush	Rush		
White - I	White - Return to Originator	Yellow - Lab Copy	Green - Sample Custodian	Blue - Originator	

Appendix D.3.1.2

Bldg. 910 RLC Chemical Data

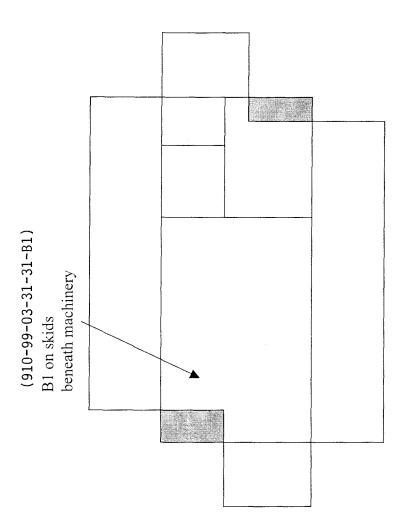
Beryllium

Sample Locations

Building 910 - First Floor Floor & Walls

Locations of Beryllium Smear Samples

North

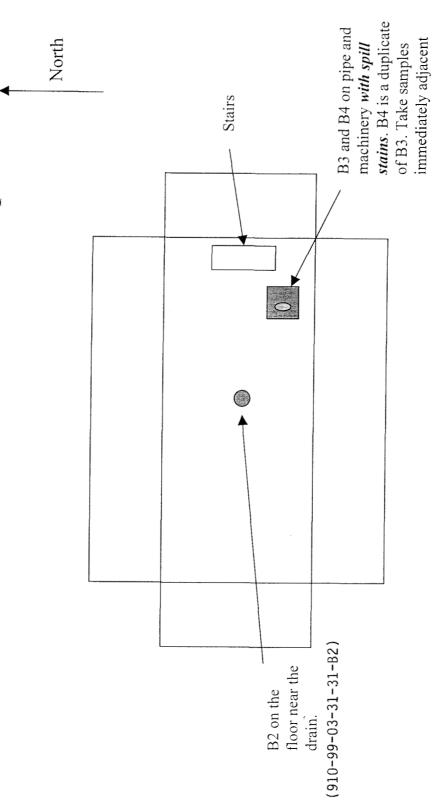


Group A RLCP Survey

60/62

Building 910 - Basement Floor & Walls

Locations of Beryllium Smear samples



Group A RLCP Survey

(910-99-03-31-31-B3 and (910-99-03-31-31-B4, respectively)

to one another.

9

61/62

Appendix D.3.1.3

Bldg. 910 RLC Chemical Data

Beryllium

Laboratory Report





Johns Manville Corporation 10100 W. Ute Avenue (80127) P.O. Box 625005 Littleton, CO 80162-5005 303 978 2000

Cover Page

Apr-8-99

Rocky Flats Environmental Technology Site

Mr. Roger Cichorz

P.O. Box 464

Building 881

Golden, CO 80402-0464

Laboratory Project No.:

99040109

Client:

PO# / Release #:

Kaiser Hill

Site Sample #:

NG2200A1

Seal #:

NR01/IH01

99Z6172

Requestor:

Dave Farler

Dear Mr. Cichorz,

The Johns Manville Technical Center (JMTC) has performed the following analytical services as requested. The results are calculated based upon the information supplied on the submission form. All laboratory data has been filed and are available upon request.

The industrial hygiene laboratory at JMTC has been fully accredited in all aspects by the American Industrial Hygiene Association (AIHA) since 1976. If you have any questions, please call (303) 978-2584.

Scope of Work:

Analysis	# of Samples	Matrix	Method	Reporting Limit	OSHA Standard (TWA)
Beryllium	13	Whatman filter	EPA-SW846-3051/OSHA ID-121	0.1 µg	-
Beryllium	2	MCE filter	NIOSH 7300	0.01 µg	0.002 mg/m3

I certify that this data package is in compliance with the terms and conditions of the subcontract, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard data package has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Industrial Hygiene Laboratory Manager

Appendix D.3.1.4

Bldg. 910 RLC Chemical Data

Beryllium

Laboratory Data

JOHNS MANVILLE TECHNICAL CENTER (JMTC)

:

Apr-8-99

Laboratory Project No.: 99040109
Client: Kaiser Hill
PO#/Release #: NG2200A1
Site Sample #: NR01/IH01
Seal #: 9926172
Requestor: Dave Farler

TABLE I: Sample Results

Total	< 0.1 ug												
Reporting Limit	0.1 µg	0.1 µg	0.1 рд	0.1 µg	0.1 рд	0.1 µg	0.1 µg	0.1 µg					
Matrix	Whatman filter												
Method	EPA-SW846-3051/OSHA ID-121	EPA-SW846-3051/OSHA ID-121	EPA-SW846-3051/OSHA ID-121	EPA-SW846-3051/OSHA ID-121	EPA-SW846-3051/OSHA ID-121	EPA-SW846-3051/OSHA ID-121	EPA-SW846-3051/OSHA ID-121	EPA-SW846-3051/OSHA ID-121	EPA-SW846-3051/OSHA ID-121	EPA-SW846-3051/OSHA ID-121	EPA-SW846-3051/OSHA ID-121	EPA-SW846-3051/OSHA ID-121	EPA-SW846-3051/OSHA ID-121 Whatman filter
Analysis	Beryllium	Beryllium	Beryllium	Berylllum	Beryllium	Beryllium	Beryllium	Berylllum	Beryllium	Beryllium	Beryllium	Beryllium	Beryllium
Laboratory Sample No	89040109-001	99040109-002	99040109-003	99040109-004	99040109-005	99040109-008	99040109-007	99040109-008	99040109-009	98040109-010	99040109-011	99040109-012	98040109-013
Client Sample No.	662-99-03-26-31-B1	662-99-03-26-31-B2	662-99-03-26-31-B3	662-99-03-26-31-B4	551-99-03-26-31-B1	551-99-03-26-31-82	551-99-03-26-31-B3	551-99-03-26-31-84	910-99-03-31-31-B1	910-99-03-31-31-B2	910-99-03-31-B3	910-99-03-31-31-B4	910-99-03-31-31-BLK

Sint County agency

N

JOHNS MANVILLE TECHNICAL CENTER (JMTC)

Apr-8-99

Laboratory Project No.:99040109Client:Kaiser HillPO#/Release #:NG2200A1Site Sample #:NR01/IH01Seal #:9926172Requestor:Dave Farler

TABLE I: Sample Results

ol. Air Ie Concentration		
Air Vol.	-	
Total	< 0.01 ug	< 0.01 ug
Main Section		
Backup Section		
Reporting Limit	0.01 µg	0.01 µg
Matrix	MCE filter	MCE filter
Method	NIOSH 7300	NIOSH 7300
Analysis	Beryllium	Beryllium
Laboratory Sample No.	910-99-03-26-31-05 99040109-014 Beryllium	910-99-03-28-31-BLK 99040109-015 Beryllium
Client Sample No.	-03-26-31-05	-03-28-31-BLK



JOHNS MANVILLE TECHNICAL CENTER (JMTC)

Apr-8-99

Laboratory Project No.: 99040109
Client: Kaiser Hill
PO#/Release #: NG2200A1
Site Sample #: NR01/IH01
Seal #: 9926172
Requestor: Dave Farler

4

TABLE II: Quality Control

Percent Recovery		95.8%		%D'.26
Amount Recovered	< 0.1 ug	4.79 ug	< 0.01 ug	0.485 ug/ml
Amount Spiked	N/A	5.0 ug	N/A	0.5 ug/ml
Reporting Limit	0.1 µg	0.1 µg	0.01 µg	0.001 µg/ml
Matrix	Whatman filter	Whatman filter	MCE filter	Solution
Method	EPA-SW846-3051/OSHA ID-121 Whatman filter	EPA-SW846-3051/OSHA ID-121 Whatman filter	NIOSH 7300	NIOSH 7300
Analyte	Beryllium	Beryilium	Beryllium	Beryllium
QC No.	Media Blank	Q9-164	Media Blank	MBS

Analyst. Anthony Carr

Quality Assurance: Dennis Murray

AIHA Accreditation No. 056



Appendix F Pad 904 Tent 11

Appendix F.1

Pad 904 Tent 11 Historical Radiological Data

Appendix F.1.1 Pad 904 Tent 11 Historical Radiological Data Radiological Surveys

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INDRINATION ONLY RADIOLOGICAL CONTAMINATION SURVEY FORM

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PAGE 1 ÓF

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RADIOLOGICAL CONTAMINATION SURVEY FORM
SURVEY RESULTS (OPM/100 CM')

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INFORMATION SURVEY FORM

PAGE 1 OF

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RADIOLOGICAL CONTAMINATION SURVEY FORM

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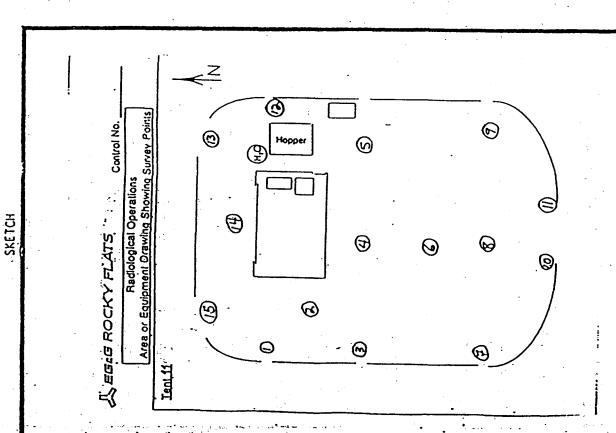
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SURVEY RESULTS (DPM/100 CM*)

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INFORMATION ONLY RADIOLOGICAL CONTAMINATION SURVEY FORM

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RADIOLOGICAL CONTAMINATION SURVEY FORM SURVEY FORM

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RADIOLOGICAL CONTAMINATION SURVEY FORM

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PAGE 2 OF 2

RADIOLOGICAL CONTAMINATION SURVEY FORM SURVEY RESULTS (OPM/100 CM')

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RADIOLOGICAL CONTAMINATION SURVEY FORM

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RADIOLOGICAL CONTAMINATION SURVEY FORM

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PAGE 2 SURVEY RESULTS (DPM/100 CM1)

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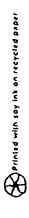
INFORMATION ONLY RADIOLOGICAL CONTAMINATION SURVEY FORM

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	CAL DUE DATE	CAL DUE DATE: 7-7-8	85-7-6		
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PAGE 1 OF

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RADIOLOGICAL CONTAMINATION SURVEY FORM SURVEY RESULTS (OPM/100 CM')

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PAGE 1 OF

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	MODEL;	ELECTRA			
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RADIOLOGICAL CONTAMINATION SURVEY FORM

SURVEY RESULTS (DPM/100 CM*)

PAGE 2 OF 2

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FOR: P/WRE PF	PRL					
RWP X OT	OTHER BOUTING	MFR:	EBER.	EBER.	EBER.	EBER.
BUILDINGLOCATION:	ROOM:	MODEL: SERIAL #:	S.A.C4	S.A.C4	S.A.C 4	S.A.C 4
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		MFR:	EBER.	EBER.	EBER.	EBER.
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		MODEL:	ELECTRA			
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RADIOLOGICAL CONTAMINATION SURVEY FORM INFORMATION ONL

PAGE 1 OF

124	REMOYABLE CONTAMINATION SURVEY INSTRUMENT DATA
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LOG NUMBER:		SURVI	SURVEY INSTRUMENT DATA	NTDATA	
FOR: P/WRE PRL		•			
RWP LOTHER ROYFINE	MFR:	BBER.	EBER.	EBER.	EBE
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DATE: 15-98 TIME: 15	CAL DATE: CAL DUE DAT	CAL DATE: 3-13-92 CAL DUE DATE: 9-13-98	3-24-58		
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	CAL DUE DAT	CAL DUE DATE: 7-7-58	7-6-58		
		TOTA	TOTAL CONTAMINATION	ATION	
		SURVI	SURVEY INSTRUMENT DATA	NTDATA	
	MFR:	N.E. TECH			
	MODEL:	ELECTRA			
PERFORMED BY (PRINT NAME): ,, , , , ,	SERIAL #:				
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RCT SIGNATURE DATE	CAL DUE DATE:	ij			
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RADIOLOGICAL CONTAMINATION SURVEY FORM SURVEY RESULTS (OPM/100 CM')

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FOR: P/WRE PRL						
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		SERIAL #:	82770	80838		
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		MFR:	N.E. TECH			
		MODEL:	ELECTRA			
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PAGE 2 OF 2

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FOR: P/WRE PR	PRL				e.	
RWP CO	OTHER ROUGINE	MFR:	EBER.	EBER.	EBER.	EBER.
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)	3 7 3	MFR:	EBER.	EBER.	EBER.	EBER.
		MODEL:	B.C. 4	B.C. 4	B.C. 4	B.C. 4
COMMENTS:		CAL DATE:	1-7-58	1-6 30		
		CAL DUE DA'	CAL DUE DATE: フェアー 58	369-6		
			TOTA	TOTAL CONTAMINATION	ATION	
			SURVE	SURVEY INSTRUMENT DATA	INT DATA	
		MFR:	N.E. TECH			
		MODEL:	ELECTRA			
PERFORMED BY (PRINT NAME):	Whiez	SERIAL #:				
RCT SIGNATIBRE	1 4.28-58 EMP# DATE	CAL DATE:	1			
		BACKGROUND	D:			
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PAGE 2 OF 2

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FOR: P/WRE PRL					
RWP COTHER ROSHINE	MFR:	EBER.	EBER.	EBER,	EBER.
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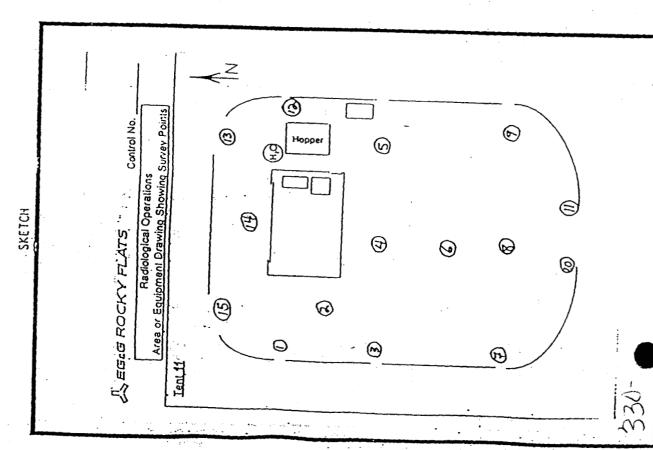
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RADIOLOGICAL CONTAMINATION SURVEY FORM

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RADIOLOGICAL CONTAMINATION SURVEY FORM SURVEY RESULTS (OPM/100 CM')

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LOG NUMBER:	FOR: P/WRE PRL	RWP COTHER ROLLING	BUILDINGLOCATION: 904 Pad		ITEM DESCRIPTION: () CEKKU (ONLO) RO AT JULYER			COMMENTS:						PERFORMED BY (PRINT NAME): // // //	J Hak	RCT SIGNATURE DA			REVIEWED BY: (CALLEL R.)

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LOG NUMBER:	FOR: P/WRE PRL	RWP COTHER ROSHUR	BUILDINGLOCATION: ROOM: Tent 11	98 1230	ITEM DESCRIPTION: (100/5/11 Part Sout Survey		Δ	COMMENTS:	0		≥	Σ	PERFORMED BY (PRINT NAME): [] [] SI	RCT SIGNATORE EMP# DATE		IS	REVIEWED BY: J. Stewart-B/

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RWP COTHER	HER ROSHINE	MFR:	EBER.	BBER.	BBER.	EBER.
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DATE: 6-24-58	тіме: О 300	CAL DATE: CAL DUE DAT	CAL DATE: 3-13-58	3-24-98		
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)	MODEL:	B.C. 4	B.C. 4	B.C. 4	B.C. 4
		SERIAL #:	B 220	BC 838		
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		MODEL:	BLECTRA			
PERFORMED BY (PRINT NAME):	Miluss	SERIAL #:				
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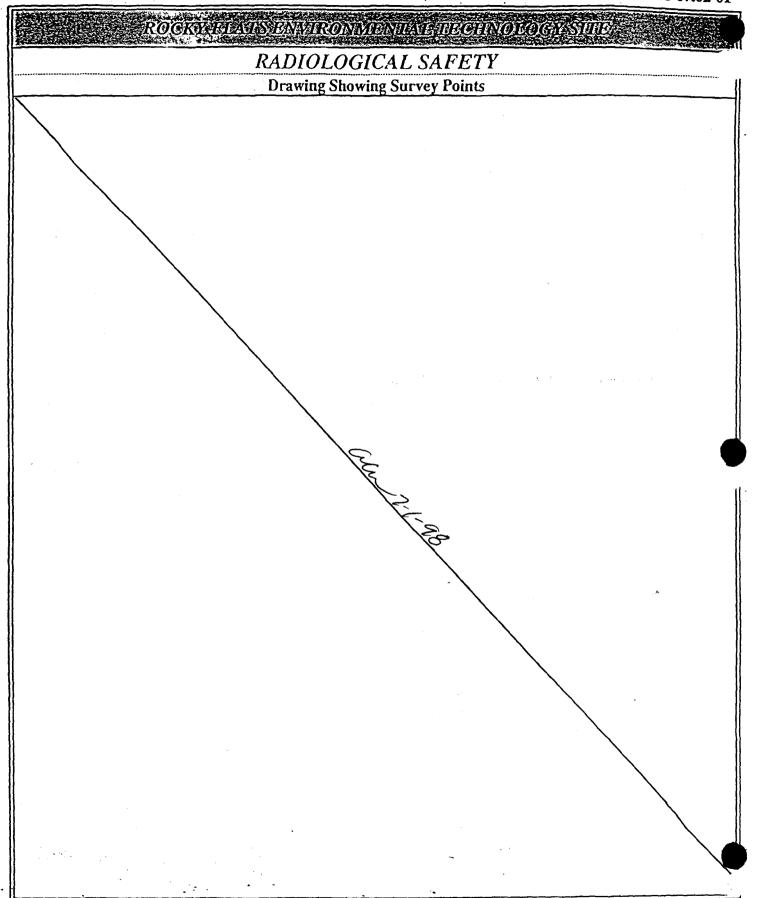
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Model SAC-4	Model SAC-4	Model	Building: 904 Pag	L	
Serial # 795	Serial # 824	Serial .	Location: Tent 11		
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Mfg. Eberline	Mfg. Eberline	Νeα	Date: 7-1-98	Time: <u>0 800</u>	
Model Bc-4	Model BC-4	Models	RCT: Munoz	711	
Serial # <u>Bc 770</u>	Serial # Bc 838	Serial #	Print name	Signature	
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Efficiency 25%	Efficiency 25%	Efficiency	Print name	Signature	Emp. #
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PAGE 3 OF 3

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RADIOLOGICAL CONTAMINATION SURVEY FORM SURVEY RESULTS (OPM/100 CM')

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MDA = CF X [2.71 + 4.65 \(\sum \) BACKGROUND (CPM)]

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ROCKY FLATS EN	NVIRONMENTAL TECHNOLOGY SITE
INSTRUMENT DATA	
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	ode Building: 904 Pad
	al Due Purpose: Weekly Court of Point Survey
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Drawing Showing Survey Points

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 , EGG ROCKY FLATS	Ra ea or Equipm	(3)	©

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DATE

RO SUPERVISION SIGNATURE

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE
INSTRUMENT DATA
Mfg. Flereline Mfg. Eberline Survey Type: Contamination
Model S. H. Model C. H. 4 Model B. C. 4 Building: 904
Schol # 2035 Serial # 42 4 Serial # 704 Location: 404 PAOL CONTROL Zechez
Cal Due 9-13-98 Cal Due 9-24-98 Cal Due 12-11 98 Purpose: Week/ TENT 1
Bkg. 0.0 Bkg. 3.5
Efficiency 33/2 Efficiency 33/2 Efficiency 25/2 KWP #J/
MDA MDA MDA Date: 7-/6-98 Time: 1540
Model Dell Model Elected Model RCT: L HANKING of Hak
Serial # 702 Serial # 1680 Serial # 1180 Serial # 9707 Serial # 1680 Ser
Cal Due 12-15-98 Cal Due 9-3-98 Cal Due 9
Bkg. 3 8 Bkg. B 32/0 Bkg. Print name Signature Emp. #
Efficiency 76 / Efficiency 32.30 Efficiency 16
MDA / 200 MDA 13 455 MDA
PRE#= 12/ 7-11-93
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RADIOLOGICAL CONTAMINATION SURVEY FORM SURVEY RESULTS (OPM/100 CM')

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SEGEG ROCKY FLATS ... Control No.

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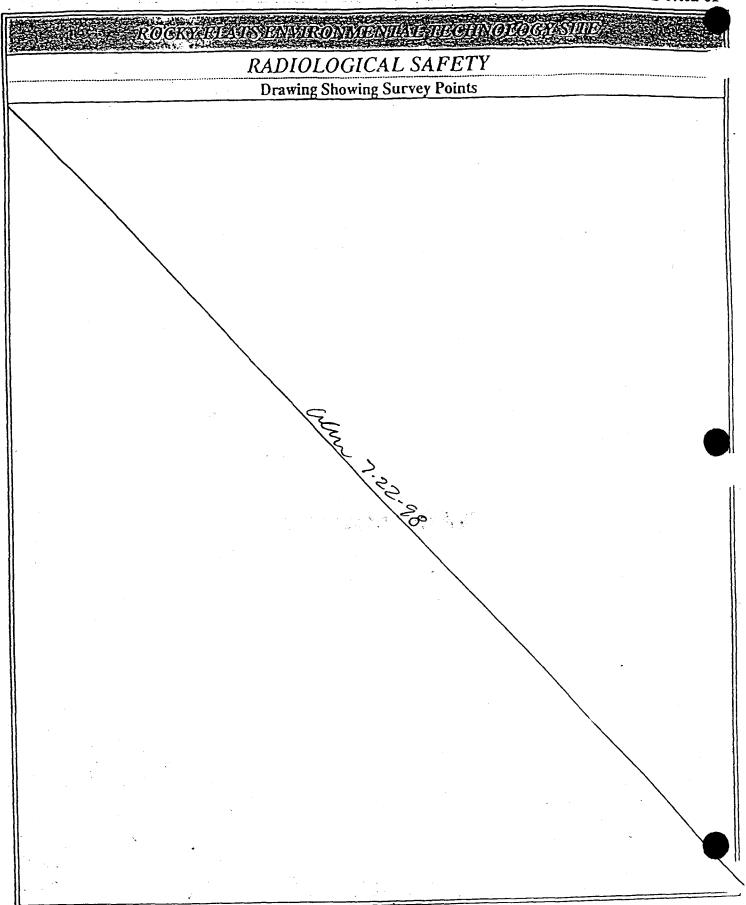
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ROCKY FLATS ENVIRONME	WIAL I BUDINOLUGY SHIP
INSTRUMENT DATA	$\alpha / \alpha / \alpha $
Mig. Ebentine Mig. Ebentine Mig.	Survey Type: Contamination Juney
Model SAC4 Model SAC-4 Model Serial # 795 Serial # 824 Serial #	Building: 904 Pad
Serial # 795 Serial # 824 Serial # 5 Cal Due 9-13-98 Cal Due 9-24-98 Cal Due 12	Purpose: Rosm Locker Rodm, Source Locker
Bkg. 0.0 Bkg. 0.0 Bkg.	Weekly Cowtro (Point
Efficiency 33% Efficiency 33% Efficiency	RWP#: cu_722.98
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Mfg. Eberline Mfg. Eberline Mfg.	Date: 7-22-98 Time: 0800
Model Bc-4 Model Bc-4 Model	RCT: HANKINS I JOAN
Serial # Bc704 Serial # Bc702 Serial #	Print name Signature
Cal Due 12-11-98 Cal Due 12-15-98 Cal Due 13	40
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		MFR: MODEL:	N.E. TECH ELECTRA			
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n	NSTRUMENT DATA	A	
Mfg.EBERLINE_	Mfg.EBERLINE_	Mfg.EBERLINE_	Survey Type: CONTAMINATION
Model SAC-4	Model SAC-4	Model SAC-	Building: 904 Pad
Scrial # <u>795</u>	Serial # B24	Serial # Bc 704	Location: T-7, Locker Room Breck Room 904 Paul T-8, T9 T-10, T-11
Cal Due <u>9-13-98</u>	Cal Due 9-24-98	Cal Due 12-11-98	Location: T-7 locker Bruk Room 904 Rul, T-8, T9, T-19 T-11 Purpose: Weekly Control Point Survey
Bkg. <u>0.0</u>	Bkg	Bkg. <u>38</u>	TENT 11
Efficiency 33%	Efficiency 33%	Efficiency 25%	RWP#: 2 7-30-18
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		_	Date: 7-30-98 Time: 0900
Mfg.EBERLINE	Mfg.NE.TECH	Mg.NE.TECH	4.1
Model BC-4	Model ELECTRA_	Model ELECTRA	RCT: Munoz 1 Menos
Serial # BC 702	Serial #	Serial #	Print name Signature
Cal Due 12-15-58	Cal Due	Cal Due	
Bkg. <u>38</u>	Bkg	Bkg.	RCT://
Efficiency 25%	Efficiency	Efficiency	Print name Signature Emp. #
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ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE RADIOLOGICAL SAFETY **Drawing Showing Survey Points**

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RADIOLOGICAL CONTAMINATION SURVEY FORM SURVEY IESULTS (OPM/100 CM')

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RADIOLOGICAL CONTAMINATION SURVEY FORM

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BOG NUMBER:	FOR: P/WRE PRL RWP OTHER	BUILDING/LOCATION: ROOM:	DATE:	TTEM DESCRIPTION:		COMMENTS:					PERFORMED BY (PRINT NAME):	RCT SIGNATURE EMP#		

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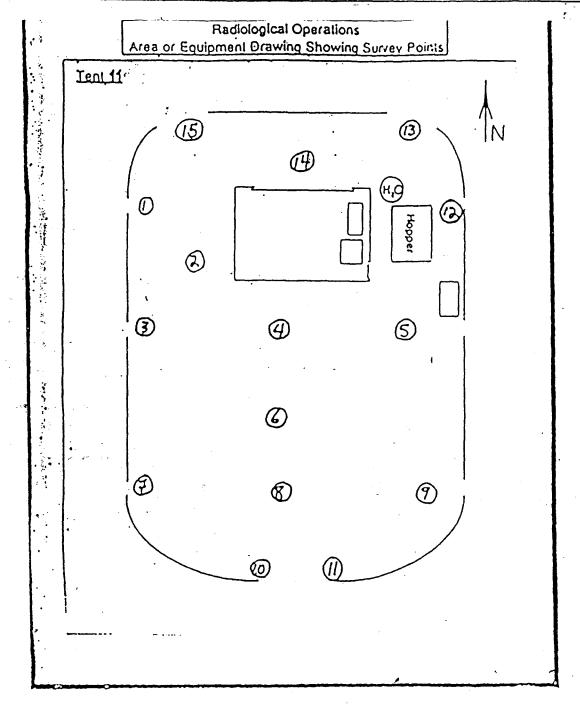
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Scrial # 795	Serial # <u>824</u>	Serial # Bczoy		T11	
Cal Due <u>9-13-98</u>			Purpose: WEEKLY	SURVEY	
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Efficiency 33%	- ·		RWP #:		
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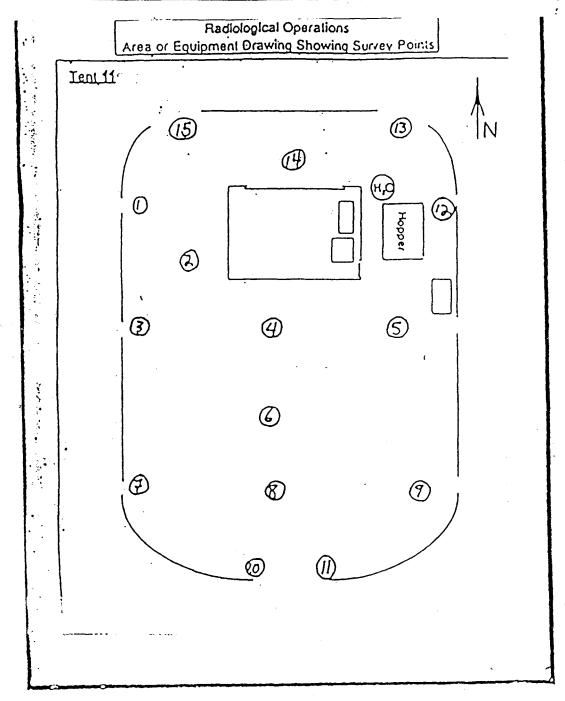
		* *		<u>SU</u>	RVEY RESU	<u>LTS</u>			
	REMO	VABLE	DIR	ECT		REMOV	ABLE	DIR	ECT
	ALPHA	BETA	ALPHA	BETA		ALPHA	BETA	ALPHA	BETA_
]									
1.	220	£ 200			23	\			
2.	220	6200			24		<u> </u>	ļ	
3.	420	_2200			25	$\overline{}$			
4.	420	<u> </u>			26				
5.	120	£200			27			 	
6.	O20	2200			28		<u> </u>		
7.	220	C200			29				
8.	C20	c200	\		30		18		
9.	220	6200	\	<i>{</i> }	31				
2.2	220	2200		100	32		163		
	620	4200		125	33			128	
	<u> </u>	6200		1/2/	34		<u> </u>	6	
34	L20	<u> </u>	 	1/00	35			 \ 	i
• • • • • • • • • • • • • • • • • • • •	<u> </u>	2200	ļ		36			 	
11	620	4200	<u> </u>		37			\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	
16.				 	38			+	
17.					39			+	
18.		. 3	208		40		 	 	
			1. X.C. 56		41		 	-	
			1				 		
11		 	 		43.], 		
22.		L	└		7,44	$\overline{\mathbb{Z}}$	1		
ii Data	Ravious de	6/98_RSS	Supervision:	$\mathcal{M}_{\mathcal{L}}$	122	O			
		w/w	Prin	Name	Sig	nature			
139	>2)				

RADIOLOGICAL SAFETY



•	1	NFOF ROCK	YFLAYS	ENVRONME	NIAL TEC	HNOLOGY	Y SITE	
		INSTRUM	ENT DATA	A Pala	l-n			
Mfg.E	BERLINE	Mfg.EBI	ERLINE_	Mfg.EBERLINE_	Survey Type:	CONTAMI	NOITAN	
Mode	ISAC-4_	_ Model S	ΛC-4	Model SAC4	Building:	904		
Script	# 79~	Secial #	824	Serial # DC 704	Location:	TENT 11	/	
Cal D	ue 9/13/9	ng Cal Due	9/24/98	Cal Due 36	Purpose:	WEEKLY	Sucvey	
Bkg.	0,0	Bkg	6.0	Cal Due -36 Bkg. 36	Pe/13/98			
Effici	ency <u><i>33%</i></u>	Efficience	sy <u>33%</u>	Efficiency 25%	RWP#:N	<u> </u>		
MDA	220	_ MDA _	275	MDA < 200	1	1	(12 	
			TCOLL	NC NE TEOU	Date: $-\theta$	13/98	Time: (1000)	
	EBERLINE			Mfg.NE.TECH_	1	•	MIS	
		_ Model E		Model ELECTRA		13/47/C / nt name	Signature	
Serial	# <u>DC 70</u>	Z Serial #28 Cal Due		Serial #	rin	и наше	Signature	- omp. ii
Rka	38			Bkg.	RCT:	/		1
	ency 25°		V JUSTA	Efficiency		nt name	Signature	Emp. #
	± 200	MDA	-	MDA				
				SURVEY R	ESULTS			
	REMO'	VABLE 1	DII	RECT	REMO\	VABLE	, DIRE	ECT
	ALPHA			BETA	ALPHA		ALPHA	BETA
	ACTUA	DUIX	ALCIIA	BLIA	ALI IIA	DETA		
1.	£20	1200		23	S/			
2.	120	4700		24				
3	120			25				/
4. —	220	1200		26	/		 	
$\{5$	420	120		27.				
6	120	L 200		29				
7. –	120	- LZ00		30			/	
8. 9.	120	L-200		31			1	
10.	120	4200		32				
1!	120	L 200		33		(1)	1	
12.	120	4200	/	1/1		18		
15.	no	CZ00		35	5	18/74	198	-
14.	120	1200		1399 30	б. <u></u> _	/ 1/1		
15	620	L700	//	37			ļ	
16				38		<i>Y</i>		
17	-	/	/_	39		 	-	
18	12		/	4(
	/ /e/)	193		42		 	-	
20	-//'-{	-	-/	4.		 	 	
21.	<u> </u>		<i></i>	4.				
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Date Re	cviewed82	6/98 RS St	specvision:	Damba	W #	<u> </u>		and the second s
31	00		Prin	Name O	Signaturo	\mathcal{I}	Cmp. +	

RADIOLOGICAL SAFETY



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE INSTRUMENT DATA Mfg.EBERLINE Mfg.EBERLINE Mfg.EBERLINE Survey Type: CONTAMINATION Model SAC-4 Model SAC-4 Model SAC-4 Serial # 795 Serial # 824 Serial # 8c 70 Building: 904 Serial # Bc 704 Location: TENT 11 Cal Due 9-13.98 Cal Due 9-24-98 Cal Due 12-11-98 Purpose: WEELLY SULVEY Bkg. 0.2 Bkg. 41 Bkg. 0.0 a 8-19-98 Efficiency 33% Efficiency 33% Efficiency 25% RWP #: -MDA czodem MDA czodem MDA czooden Date: 8-19-98 Time: 0800 Mfg.NE.TECH___ Mfg.NE.TECH_ Mfg.EBERLINE RCT: MUNOZ I Mumo Model BC-4 Model ELECTRA Model ELECTRA Serial # Serial # Bc 702 Serial # 8 Signature Print name cm 8-19-98 Cal Due 1215-58 Cal Due Cal Due Bkg. <u>38</u> Bkg. _ Bkg. ___ RCT: Efficiency _ Efficiency 25% Efficiency Print name Signature Emp. # MDA 6200den MDA MDA Comments: _ SURVEY RESULTS REMOVABLE DIRECT REMOVABLE DIRECT ALPHA BETA ALPHA | BETA BETA ALPHA BETA 23. 1. 420 6200 2. 620 24. 6200 3. 220 25. L200 4. 620 L200 26. 27. 620 4700 6. 220 28. 4200 7. 620 29. 6200 8. LZ0 30. 4200 9. 620 6200 31. 10. 620 32. £200 620 33. 4200 12. 626 c200 13. 620 35. 6200 36. 14. 620 4200 is. 620 37. £200 16. 38. 17. 41. 42. 21. Date Reviewed: 9/3/98 RS Supervision:

Cossilmon 1 E & Signature

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE RADIOLOGICAL SAFETY

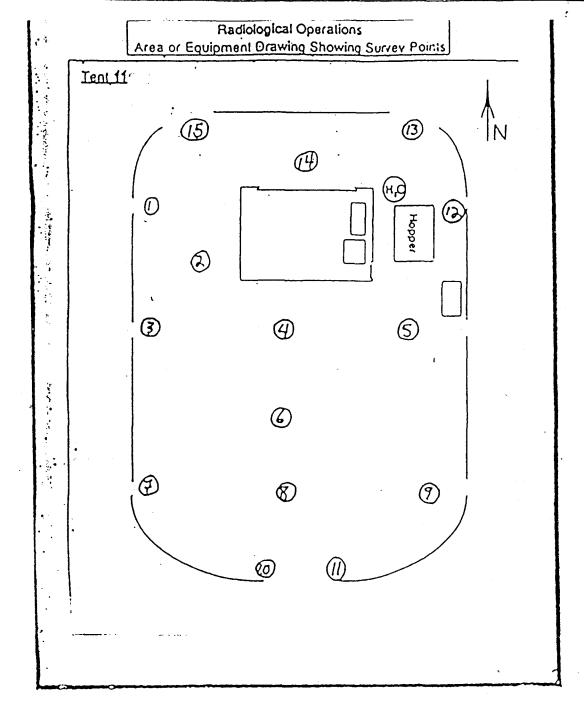
Drawing Showing Survey Points Radiological Operations Area or Equipment Drawing Showing Survey Points Tent11 **(3)** 0 (3) 3 3 4 3 8 9 0

Page L of 2	ORMATI	ON ONL	Y	<u> </u>	RS FORM	AS 07.02-01
	ROCKY FLAT	S.ENVIRONME	NTAL TEC	HNOLOGY	SITE	
r	NSTRUMENT DAT	A				
Mfg.EBERLINE_	Mfg.EBERLINE_	Mfg.EBERLINE_	Survey Type	CONTAMI	NATION	
	Model SAC-4		Building:			
	Serial # 824			TENT 11		
Cal Due 9-13-98	Cal Due 9-24-98	Cal Due 12-11-98	Purpose:	WEEKLY	Sucvey	
Bkg. 0.0		<u> </u>		aa	~ 8-27-98	
	Efficiency 33%	•				
MDA 20dpm	MDA 20dpm	MDA 200dpm				
			Date: 8-2	7-58	Time: 09	00
Mfg.EBERLINE			// /		701	
	Model ELECTRA		RCT: Mo		Vlence	
	Serial #	Serial #	Prir	nt name	Signature	S Emp. #
Cal Due 12.15.98	Cal Due	Cal Due	DOT	- an	8-27-98	
Bkg. 36		Bkg.	RCT:	nt name	Signature	/ Emp. #
Efficiency 25% MDA 200dem	MDA To	Efficiency	- Prii	ii iiame	Signature	Emp. #
		IVIDA				
PRL#:	8-27.98					
Comments:						
	ee page 2	af 2 for s		1		
	ce page 2	0 0 0 0	or y roup			
		SURVEY R	FSULTS			
, 854044	0.5			/4 D1 E	DID	ECT
REMOVA	Rre DI	RECT I	REMO\	ABLE	DIK	ECT
ALPHA B	ETA ALPHA	BETA	ALPHA	BETA	ALPHA	BETA
1. 620	-200	13				

				SURVEY RE	SULTS			
	· REMO	VABLE	DIF	RECT	REMO\	/ABLE	DIR	ECT
	ALPHA	BETA	ALPHA	BETA	ALPHA	BETA	ALPHA	BETA
				\land				
1.	<u> </u>	c 200		1 3				
į 2.	_ < 20	4200						
3.	- 620	4200						
4.	_ 620	£ 200						
5.	_	£200						
6.	L20	4200		28				
7.	-20	4200		29.		18		
8.	_ 420	<200	-	<u> </u>		R		
	<20	£200		31		100		
	<u> </u>	<200		32		je.		
	<20	4200		33.			\$0	
	426	<200		J				
	_620	<200		35				-
	620	2200		36.				
	620	1200		37				
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17.				39				\
18.				40.				
3.				41.				
-d.				42		to appeal to a		
21.				43.				
22.				44.				
•	a	12/200			,	100		

Date Reviewed: 9/3/88 RS Supervision: K Com/1900 /c
Print Name Signature

RADIOLOGICAL SAFETY



Page INFORMATION

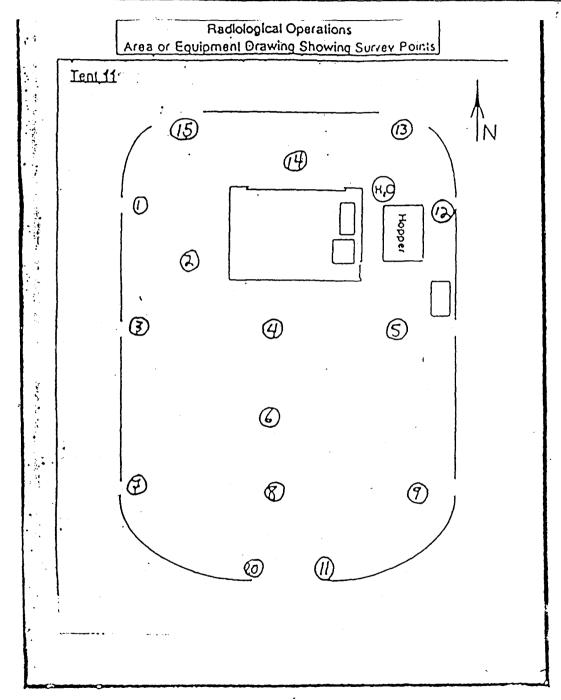
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ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE INSTRUMENT DATA Mfg.EBERLINE_ Mfg.EBERLINE_ Mfg.EBERLINE_ Survey Type: CONTAMINATION Model SAE 4 Building: 904 Model SAC-4 Model SAC-4 Location: TENT 11 Serial # 824 Serial # 704 Purpose: WEEKLY SURVEY Cal Due 9-13-98 Cal Due 9-2498 Cal Due 12-11-98 Bkg. _______ Bkg. <u>0.3</u> Bkg. __37_ Efficiency 33% Efficiency 33% Efficiency 25% RWP#: MDA 2000m MDA 800dom MDA 20dpa Date: 9-298 1-295 Time: 1000 Mfg.EBERLINE Mfg.NE.TECH Mfg.NE.TECH_ RCT: M.E. VANCHN 17. Model BC-4 Model ELECTRA Model ELECTRA Serial # 702 Serial # Serial # Cal Due ____ Cal Due ____ Cal Due ____ Bkg. 39 Bkg. _____ RCT: Bkg. ____ Efficiency 25% Signature Print name Emp. # Efficiency _____ Efficiency ___ MDA ____ MDA 200dpm MDA PRL#: Comments:

SURVEY RESULTS DIRECT REMOVABLE DIRECT REMOVABLE BETA ALPHA BETA ALPHA BETA ALPHA BETA <200 <20 23. 24. 2. 3. 25. 4. 26. 5. 27. 6. 28. 7. 29. 8. 30. 9. 31. 10. 32. 1 ! 33.___ 12. ي∹ر 13. 35. 14. 36. 37. 15. 38. 16. 39. 17. 18. 40. 41 42. 21. 22. mx (AND)

RADIOLOGICAL SAFETY

Drawing Showing Survey Points



36)

R	ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE								
Mfg.EBERLINE Mfg.EBERLINE Mfg.EBERLINE Model SAC-4 Model SAC-4 Model SAC-4 Serial # 795 Serial # 824 Serial # 8283B Location: Tent // Purpose: Weekly Suever MDA 2004 MDA MDA MDA MDA MDA MDA MDA MDA MDA MDA									
Comments:	See Son	ey May for		oints.					
REMOVABLE ALPHA BETA	A ALPHA	SURVEY R RECT BETA 23	REMO\ ALPHA		DIR ALPHA				
1. \(\alpha \) 20 \(\alpha \	00 200 200	24 25 26 27							
6. <u>6.</u> <u>6.</u> <u>6.</u> <u>6.</u> <u>6.</u> <u>6.</u> <u>6.</u> <u>6</u>	00	28 6 29 30 31 31		E					
1! 420 42 12. 620 626 13. 626 62 14. 620 62	00 00 00	33 34 35 36 37		7	6.58				
16.		38 39 40 41 42							
21. 22. Date Reviewed: 9/15/48 368		43		W					

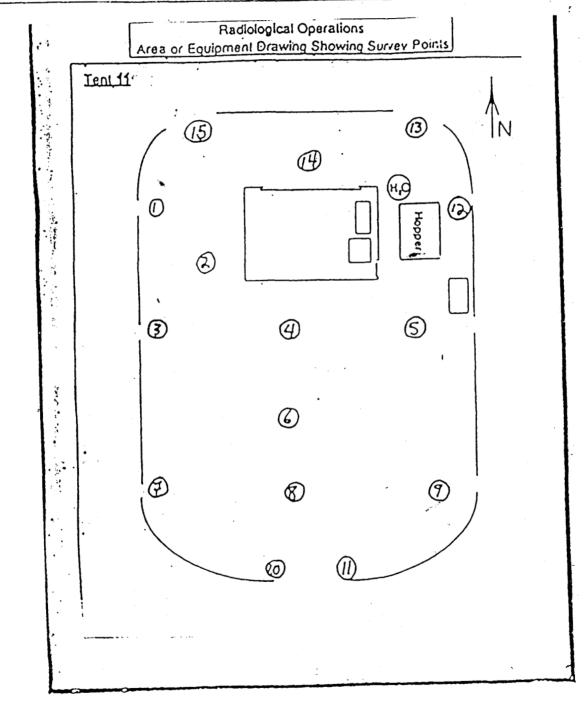
ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE RADIOLOGICAL SAFETY **Drawing Showing Survey Points** Radiological Operations Area or Equipment Drawing Showing Survey Points Tent11 **(3)** (4) 0 **(3**) 2 3 **(P)** 9 0



INFORMATION FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRU	MENT DATA		•		
Mfg.EBERLINE_ Mfg.EI			Survey Type: CO		ON
Model SAC-4 Model	SAC-4	Model SAE-4	~	904	
Scrial # 767 Serial	824	Serial # <u>838</u>	Location:		
Cal Due 10-14-98 Cal Du	e <u>9-24-98</u>	Cal Due <u>1 - 9 - 9 8</u>	Purpose:	WEEKLY SU	EVEY
	0.1	Bkg. 40			
Efficiency 33% Efficie	ncy <u>33/~</u>	Efficiency 25 %	RWP#	1 5-1	6-88
MDA 120 dem MDA	620 dem	MDA 2200 dzny		00	
			Date: <u>5-/6</u>	<u>- 78</u> Tim	ne: 1440
		Mfg.NE.TECH	11.11		^
Model BC-4 Model	ELECTRA_	MOGNELECTRA	RCT: HANK!	us Hak	
Serial # 707 Serial		Serial #	Print na	ame	
Cal Due/2/5-98 Cal Du	e Xe	Cal Due	500	De S	
Bkg. 4/ Bkg.		Bkg. Efficiency MDA	RCT:Print na	- / - (Simple Comp #
	ncy	efficiency	Print na	ame	Signature G - Emp. #
MDA 4200 dpm MDA		ÍMBDA			
nni #		7 , ,			
PRL#:		-///	0	1 1	
Comments:		-/-	7	4,0	0-
		SURVEY R	ESULTS		
254044845	. DIR		REMOVAB	ore i	DIRECT
REMOVABLE	DIR	ECI			
ALPHA BETA	ALPHA	BETA	ALPHA B	ETA	ALPHA BETA
1.420 4200	-1- ()	23			
2 220 2200	7	24			
3. < 20 < 20c		25			
4. 220 /208		26			
5. 200 200		27			
6. < 20 < 20		>28			
7. 220 2200		29			
8. 220 2200		30			
9. 220 2200		31			
10. 22 0 22 00		32		-/- 9-	
11/20/120	i i	33		1	!
$\frac{12.200}{1.000}$		35			
15. 270 2700		36		- 1)
14. 2200 2200		37			
15.220 2200	2	$-\sqrt{38}$			73
16.		7 739			7
17.	-				
18.	-	46)		
		42			
21					
21.					
\(\alpha \tau \)	٧				
Date Reviewed: 5/28/48 RS	Supervision:	Ewell	, X Zwell	1	\
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RADIOLOGICAL SAFETY

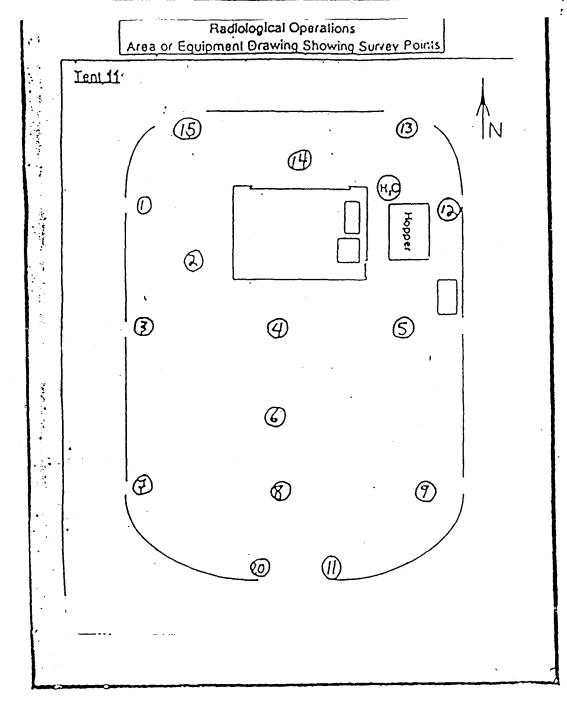


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ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE									
n	NSTRUMENT DAT	A.							
Mfg.EBERLINE_	Mfg.EBERLINE_	Mfg.EBERLINE_	Survey Type: CONTAMINATION						
Model SAC-4	Model SAC-4		Building: 904						
Scrial # 767	Serial # 795	Serial # <u>Bc 838</u>	Location: TENT 11						
Cal Due 10-14-48	Cal Due 3.16-99	Cal Due 1-9-99	Purpose: WEEKLY SURVEY						
Bkg. 0.	Bkg. <u>0.2</u>	Bkg. <u>39</u>	a~ 9-23.98						
Efficiency 33%	Efficiency 33%	Efficiency 25%	RWP #:						
MDA 20djan	MDA Zoden	MDA 200 dpm	Date: <u>9-23-98</u> Time: <u>8830</u>						
Mfg.EBERLINE	Mfg.NE.TECH	Mfg.NE.TECH	61 000						
Model BC-4	Model ELECTRA_	Model ELECTRA	RCT: Monoz Muncy						
Serial # Bc702	Serial #	Serial #	Print name Signature Chip. #						
Cal Due 12-15-58	Cal Due Ls	Cal Due	a 9-23.98						
Bkg. 38	. 1 -	Bkg	KCI:						
Efficiency 25%	\ -	Efficiency	Print name Signature Emp. #						
MDA 200dem	MDA	MDA							
PRL#:	9-23.98								
Comments:									
Comments.	-6	ee Map Pa	40.7						
		ec rap in	J*						

	SURVEY RESULTS									
	REMO	REMOVABLE DIR		LECT	REMOV	ABLE	DIRECT			
	ALPHA	BETA	ALPHA	BETA	ALPHA	BETA	ALPHA	BETA		
	420	4200		23.						
1.	220	2200		24.						
3.	620	4200		25.						
4.	420	4200								
5.	220	4200		27.						
6.	420	4200		28.		\				
7.	220	2200		29.		1				
	420	1200		30.		1				
9.	420	6200		31.						
10.	220	6200		32.		12				
11	L20	1200		33.						
	620	6200		. 4د			1/2			
∦15. .	620	4200		35.			1			
	420	4200		36.						
	620	6200		37.			1			
				38.			 			
17.				39.			 			
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				41.						
120.				42.						
21.				43.				<u> </u>		
22.				44.						
Date	0ate Reviewed: 10/3/48 RS Supervision: J. Ewell Signature Print Name Signature									

RADIOLOGICAL SAFETY



		CI IIII Y		TO TO
INFO	OCKY FLATS	SENVIRONME	NTAL TECHNOLOGY SIT	E
	TRUMENT DATA			-
ERLINE_ M	fg.EBERLINE_	Mfg.EBERLINE_	Survey Type: CONTAMINATION	NC

Mfg.EBE Model SAC-4 Model SAC-4 Model SAC-4 904 Building: Serial # 795 TENT 11 Scrial # 767 Serial # Bc 838 Location: Cal Due 10-14-98 Cal Due 3-16-99 Cal Due 1-9-99 Purpose: WEEKLY SUCKEY Bkg. <u>01</u> Bkg. <u>07</u> Efficiency <u>33%</u> Bkg. 43 an 9-30-98 Efficiency 25% RWP#: MDA 2000pm MDA 20djun MDA 20den Date: _ 9-30-58 Time: 0830 Mfg.EBERLINE Mfg.NE.TECH Mfg.NE.TECH RCT: Monox Model BC-4____ Model ELECTRA Model, ELECTRA Serial # Bc 702 Serial #\s Serial # Print name Signature < Cal Due 12-15-58 Cal Due Cal Due ` - 9-30-98 Bkg. _ Bkg. 36 Bkg. RCT: Efficiency _ Efficiency 25% Efficiency Signature Print name Emp. #

	C-9-30-98
PRL#:	
Comments:	

MDA 200den MDA

See Survey Map 1g. 2

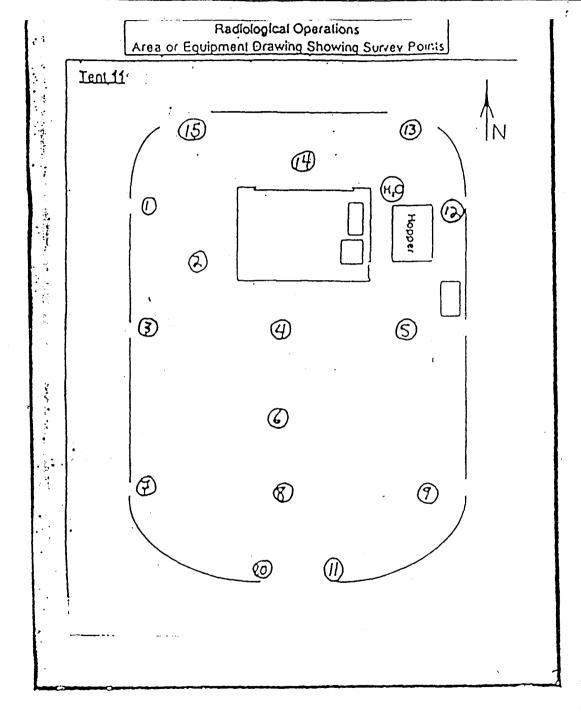
MDA

SURVEY RESULTS REMOVABLE DIRECT DIRECT **REMOVABLE** ALPHA BETA ALPHA BETA ALPHA BETA ALPHA BETA 420 c200 23. < 20 24. 4200 220 3. 2200 25. 4. 220 C200 26. 5. 420 6200 27. 6. 620 2200 28. 7. 120 c200 29. 8. 620 £200 30. 9. 620 31. 4200 10. 220 2200 32. 420 C200 33. 12. _20 2200 .≒د 15. 620 35. 4200 14. 620 6200 36. is. <u>620</u> < 200 37. 16. = 38. 17. 39. 18. 40. 41 42. 43. 21.

Date Reviewed: 10/5/41 RS Supervision: J. Eau ell

RADIOLOGICAL SAFETY

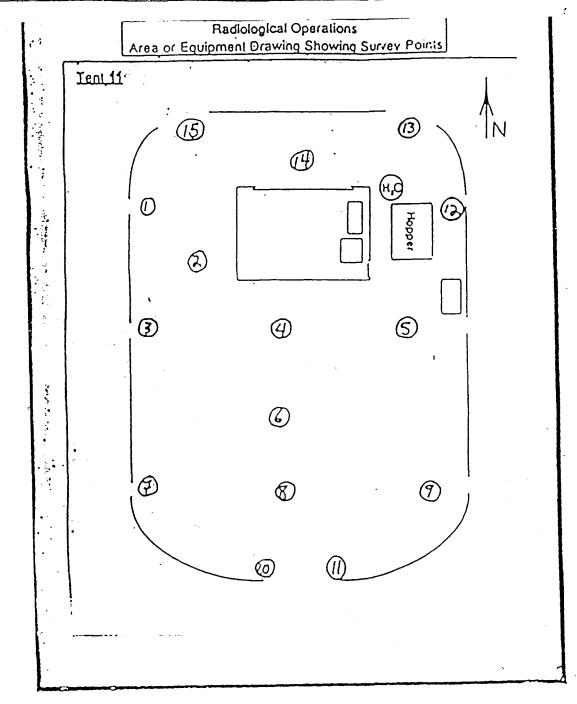
Drawing Showing Survey Points



	ROCK	Y FLATS	ENVIRO	NMENT	AL TEC	HNOLOGY	Y SITE	
r	NSTRUM	IENT DAT	A					
Mfg.EBERLINE_					rvey Type:	CONTAMI	NATION	
Model SAC-4	Model S	AC-4	Model SAC	4 Bu	ilding:			
Scrial # 1050				14 LO	cation:	TENT 11	<u> </u>	
Cal Due 2-26-99	Cal Due	2-14-93	Cal Due <u>2-</u>	4-99 Pu	rpose:	WEEKLY	SURVEY	
Bkg. U.O						1 -		
Efficiency 33/o	Efficien	cy 33/0	Efficiency	25% RV	√P #:	-JH/	10-7-58	
1DA 120 dem	MDA ∠	20 dem	MDA 220	odon	-			
				Da	te: / 0	-7 -58	Time: 10	0,00
Afg.EBERLINE	Mfg.NE	.TECH	Mfg.NE.TE	^น	-			
Model BC-4				CTRA RC	T: HAN	Kins H.		
Serial # 706	Serial#	>-	Serial #		Prin	nt name		
Cal Due 12-22-98	ຽ Cal Duế	SO	Cal Due	0		<i>Y</i> .		
3kg. 38	Bkg	72	Bkg.	XY RC	T:	×20-51		/
Efficiency 25%	Efficien	cy C	Efficiency_		Prir	it name	Signature	Emp.
MDAL200 don	, MDA _		MDA	<u> </u>			Signature	
\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \								
PRLAS								
Comments. //								
X	7							
	<78							
								
			SUR	VEY RESU	LTS			
REMOVA	BLE	DII	RECT		REMO\	/ABLE	DIR	ECT
ALPHA B	ETA	ALPHA	BETA		ALPHA	BETA	ALPHA	BETA
		/						
420 5	200			23.				
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7. 8.	())		43.				
7. 8.		58		$\sqrt{\frac{1}{2}}$				
7. 8.) S8	J. Ew	43.				

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

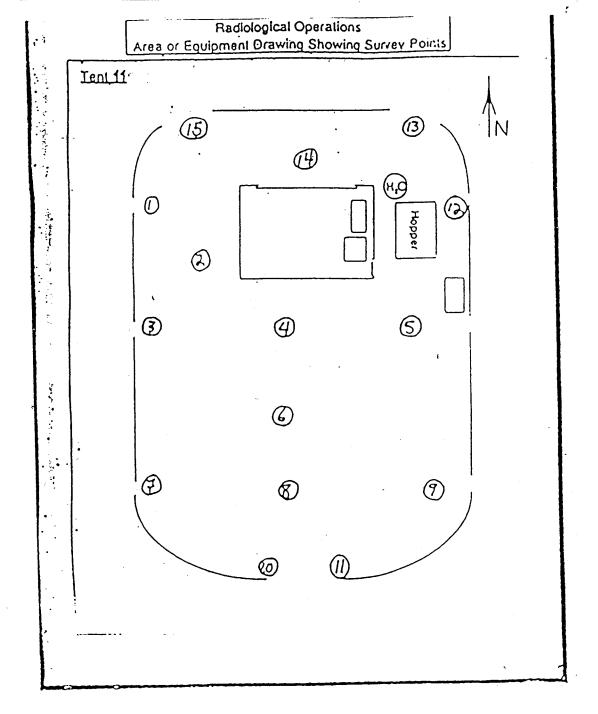


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	11	ROCK	Y FLATS	SENVIRONME	NTAL TEC	HNOLOG	Y SITE	
		INSTRUM	ENT DAT	4 10	1-14-48			
Mfg.El	BERLIN	E_ Mfg.EBI	ERLINE_	Mfg.EBERLINE_	Survey Type	CONTAMI	NATION	
Model	SAC-4_	Model S	AC-4	Model SAC-4	Building:	904		
		Serial #	795	Serial # <u>838</u>	Location:	TENT 1	/	
				Cal Due 1-9-99	Purpose:	WEEKLY	Sucvey	
Bkg.	Q.O.C	pric Bkg	Odean	Bkg. <u>40 cpm</u>				
Efficie	ncy <u>.33</u>	Efficiend	y <u>33</u>	Efficiency .25	RWP #:			
MDA_	O don	MDA _	odpin	MDA 200 dom		,		
1	•		•	•	Date: <u>/0 ~</u>	14-98	Time: 1430	2
	BERLIN	E Mfg.NE.	TECH	Mfg.NE.TECH	RCT: PE	- , / .	001	
Model	BC-4	Model E	LECTRA_	Model ELECTRA	RCT: PE	vezah 1	P Cinjust	
Serial #	# <u>_/0</u> _	Serial #		Serial #	Pru	nt name	Signature	-
		.98 Cal Due				,		,
	47 cp			Bkg.	RCT:	/	<u> </u>	/
	ncy <u>. 25</u>			Efficiency	Prii	nt name	Signature	Emp. #
MDA_	ا ز) علو	pm MDA_		MDA				
PDI#	•							
Comm	onto:							
Comm	ents.							
				SURVEY R	ESULTS			
	REMO	VABLE [Dit	RECT	REMO	/ARLE	, DIRI	ECT
	ALPHA	BETA	ALPHA	BETA	ALPHA	BETA	ALPHA	BETA
	20	2 200		22				·
1. <u>c</u> 2. <i>c</i>	30	< 200					-	
2. <u>4</u> 3. ⁴	20	< 200						
3. <u> </u>	20	< 200 < 200		26	•			
5.	20	< 200		27				
·	20	2 200		28				
6. <u>~</u> 7. ~	20	2 200		29				
8. 2	<u> </u>	·< 200		30				
9. 2		< 200		31				
10	- 	< 300		32				
11 2	20	< 200		33				
12. c	20	< 300 l		<u> </u>			<u> </u>	
15. 6	<u> </u>	2 700	•	35.				
14 6	20	c 200		36.				
15. 4	20	c 260		37.				
16				38.		,		
17.	-			39.		100.00		
18		11/1		40				
10	112			41.				
	NO			42				
21.	\mathcal{V}			43.				
22.				44.		<u> </u>		
/		1		3	(3)	V		
Date Revi	icwod: 10	19 98 RS Su	pervision:	James (
278	/ l	ι -	Print	Name 0	Signature		J - Եւութ. #	

RADIOLOGICAL SAFETY

Drawing Showing Survey Points



INFORMATION ONLY

	NSTRUMENT DAT.	•	1-14-18 1 Sel ·
			Survey Type: CONTAMINATION
Model SAC-4	Model SAC-4	Model SAC-4	Building: 904
Scrial # 824	Serial # .795		Location: TENT 11
Cal Due 3:21.99	Cal Due 3.16.99	Cal Due 1-9-49	Purpose: WEEKLY SURVEY
Bkg. O. OcpM	Bkg. 0.0 cpm	Bkg. 41 com	
Efficiency 33	Efficiency 133		RWP #:
MDA 20 day	MDA 20 dpm	MDA 200 dpm	Date: 10^{-19-98} Time: 1340
Mfg.EBERLINE	Mfg.NE.TECH	Mfg.NE.TECH	
Model BC-4	Model ELECTRA_	Model ELECTRA	RCT: JABLROWSKI 1 DZ
Serial # <u>'702</u>	Serial #	Serial #	Print name // Signature
Cal Due 12.15.98	Cal Due	Cal Due	! /
Bkg. 36 cpri	Bkg	Bkg	RCT:/
Efficiency <u>125</u>	Efficiency		Print name Signature
MDA ZECIAPM	MDA	MDA	
PRL#:		*	
Comments:			

SURVEY RESULTS									
REMOVABLE	DIRECT	REMO\	VABLE	DIR	DIRECT				
ALPHA BETA	ALPHA BETA	ALPHA	BETA	ALPHA	BETA_				
1. < 20 < 200		23.							
2. < 20 < 200		24.							
3. 4 20 4 200		25.							
4. < 20 2 200		26.							
5. < 20 < 200		27.							
6. < 20 < 200		28.							
7. (20 2 200		29.							
8. < 20 < 200		30.							
9. < 20 < 700		31.							
10. < 20 < 200		32.							
11 < 3.0 < 200		33.							
12. < 30 < 700		ــــــــــــــــــــــــــــــــــــــ							
13. < 20 < 200		35.			Andrew Company				
14. < 30 < 200		36.							
15. 2 20 < 200	2	37.		· · · · ·					
16	1	38.							
17. 18. 1 16.11.31		39.							
18. / 10		40.							
		41.							
		42.							
21.		43							
22.		44							
, ,	1 / 1/2 / 1	(1)	11						

Date Reviewed: 10 13 198 RS Supervision: 1 Ew W Signature

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE RADIOLOGICAL SAFETY **Drawing Showing Survey Points** Radiological Operations Area or Equipment Drawing Showing Survey Points Tent 11° **(3)** (15) 3 3 4 (5) **(** Ð 9 0

MEGRMATION ONLY

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

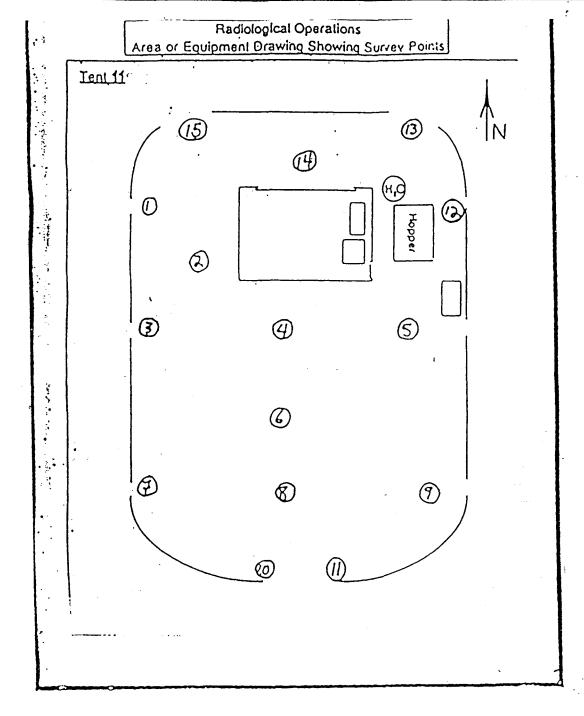
INSTRUMENT DATA Mfg.EBERLINE Mfg.EBERLINE Mfg.EBERLINE_ Survey Type: CONTAMINATION 904 Model SAC-4 Model SAC-4 Model SAC-4 Building: ____ Scrial # 824 Location: TENT 11 Serial # 795 Serial # 838 Cal Due/-9-99 Cal Due 3-16-59 Purpose: ____ WEEKLY SUEVEY Cal Ducz-21-99 Bkg. <u>0,2</u> Bkg. ___40 RWP #: \\ \/\A Efficiency __33_ Efficiency 133 Efficiency 25 MDA 20dpm MDA 200 dem MDA 26 dpm Date: 11.29-98 Time: 0900 Mfg.EBERLINE Mfg.NE.TECH Mfg.NE.TECH RCT: P Everich Model BC-4_ Model ELECTRA_ Model ELECTRA Serial # 701 Signature Serial # _____ Serial # Print name Cal Due 12-15-98 Cal Due _____ Cal Due Bkg. ____ Bkg. ____ RCT:// Soloza Efficiency 125 Signature Efficiency _____ Efficiency ___ Print name MDA 200 dam MDA MDA

PRL#:	
Comments:	

	REMOVABLE		REMOVABLE DIRECT		REMOVABLE		DIRECT	
	ALPHA	BETA	ALPHA	BETA	ALPHA	BETA	ALPHA	BETA
	< 20	× 200		23.				-
. ,	<20	< 200		24				
	-20	~200		25				
	~20	<200		26				
• .	~20	<200		27				
	~20	1200		28				
	-20	~200		29.				
	<20	-200		30.				
	-20	4200		31.				
0.	420	<200		32.				
•	120	~200		33.				
2.	420	×200		J4.				
آ	120	-200		35.				
	<20	4200		36.				
	<20	4200		37.				
6				38.				
7.		.01.98		39.				
8.		09:11		40.				
O.	. 10	7		41.				
	1 100			42.		·	÷	
1.	VV			43.	est :	1		
2./				44.				

Date Reviewed: ______RS Supervision! Print Name Signature

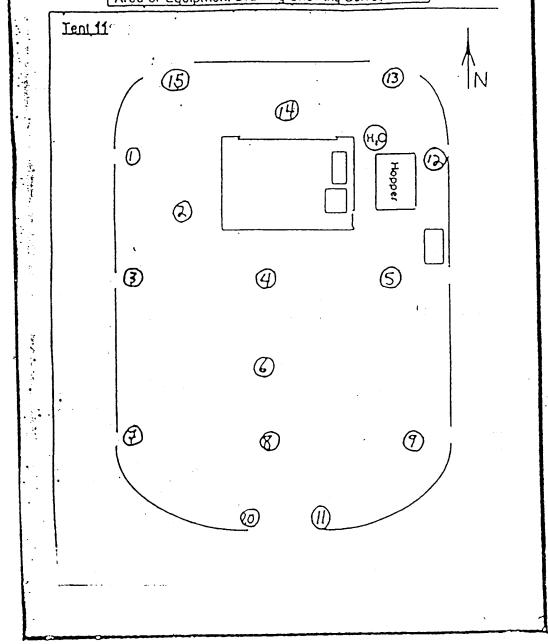
RADIOLOGICAL SAFETY



Page 1 of 2	MFC	RIMA	IIIN	ON	ILY		RS FORM	1S 07.02-01
	ROCK	Y FLATS	ENVIRO	NME.	NTAL TEC	HNOLOGY	SITE	
	INSTRUM	MENT DATA	l.		_			
Mfg.EBERLINE_	Mfg.EB	ERLINE_	Mfg.EBER	LINE_	Survey Type:	CONTAMIN	NATION	
Model SAC-4	Model S	SAC-4	Model SAC	A Za	Building:	904		
Scrial # <u>824</u>	Serial #	795	Serial # _8	38	Location:	TENT 11		
Cal Due 3-2/-9'					Purpose:	WEEKLY	Sucvey	
Bkg/	Bkg	0.2	Bkg30	6				
Efficiency 33%	Efficien	cy <u>33%</u>	Efficiency,	25%	RWP #:			
MDA _20_	MDA _	20	MDA _2	00		_		
					Date: <u>//- 4</u>	1-98	Time: 140	2
Mfg.EBERLINE		TECH	•		0.	211	Signature	00
Model BC-4		ELECTRA_	Model ELE		RCT: Sick	[Ph//c-1	/ Oct 11111	· Elec
Serial # <u>9/6</u>	Serial #		Serial #		Prin	it name	Signature	
Cal Due 3-16-99	Cal Due		Cal Due					
Bkg. 43			Bkg		RCT:			
Efficiency 25%			Efficiency		Prir	it name	Signature	Emp.#
MDA 206	MDA		MDA					
PRL#:								
Comments:								
			SUR	VEY R	ESULTS			
REMOVA	ABLE	l DIR	RECT		REMOV	/ABLE	DIR	ECT .
ALPHA		ALPHA			ALPHA	BETA	ALPHA	BETA

REMOVABLE ALPHA BETA ALPHA B		SURV	EY RESULTS			
1. \(\ \ 20 \) \(\ \ 200 \) 2. \(\ \ 20 \) \(\ \ 200 \) 3. \(\ \ 20 \) \(\ \ 200 \) 4. \(\ \ 20 \) \(\ \ 200 \) 5. \(\ \ 20 \) \(\ \ 200 \) 6. \(\ \ 20 \) \(\ \ 200 \) 7. \(\ \ 20 \) \(\ \ 200 \) 8. \(\ \ 20 \) \(\ \ 200 \) 9. \(\ \ 20 \) \(\ \ 200 \) 9. \(\ \ 20 \) \(\ \ 200 \) 10. \(\ \ 20 \) \(\ \ 200 \) 11. \(\ \ 20 \) \(\ \ 200 \) 12. \(\ \ 20 \) \(\ \ 200 \) 13. \(\ \ 10 \) \(\ \ 20 \) \(\ \ 200 \) 15. \(\ \ \ 20 \) \(\ \ \ 200 \) 15. \(\ \ \ 20 \) \(\ \ \ 200 \) 15. \(\ \ \ 20 \) \(\ \ \ 200 \) 15. \(\ \ \ \ 20 \) \(\ \ \ 200 \) 16. \(\ \ \ 38 \) 17. \(\ \ \ 20 \) \(\ \ \ 200 \) 18. \(\ \ \ 20 \) 19. \(\ \ \ \ \ 200 \) 19. \(\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	REMOVABLE	DIRECT	REMOV	ABLE	DIR	ECT .
2.	ALPHA BETA	ALPHA BETA	ALPHA	BETA	ALPHA	BETA
2.						
3. \(\langle 20 \) \(\langle 200 \) 4. \(\langle 20 \) \(\langle 200 \) 5. \(\langle 20 \) \(\langle 200 \) 6. \(\langle 20 \) \(\langle 200 \) 7. \(\langle 20 \) \(\langle 200 \) 8. \(\langle 20 \) \(\langle 200 \) 9. \(\langle 20 \) \(\langle 200 \) 10. \(\langle 20 \) \(\langle 200 \) 11. \(\langle 20 \) \(\langle 200 \) 13. \(\langle 20 \) \(\langle 200 \) 15. \(\langle 20 \) \(\langle 200 \) 15. \(\langle 20 \) \(\langle 200 \) 15. \(\langle 20 \) \(\langle 200 \) 16. \(\langle 38 \) 17. \(\langle 30 \) \(\langle 200 \) 18. \(\langle 200 \) \(\langle 200 \) 16. \(\langle 38 \) 17. \(\langle 39 \) 18. \(\langle 40 \) 18. \(\langle 40 \) 19. \(\langle 41 \) 21. \(\langle 20 \) \(\langle 41 \) 22. \(\langle 44 \) 23. \(\langle 200 \) 24. \(\langle 200 \) 24. \(\langle 200 \) 25. \(\langle 200 \) 26. \(\langle 200 \) 29. \(\langle 200 \) 30. \(\langle 200 \) 31. \(\langle 200 \) 32. \(\langle 200 \) 33. \(\langle 200 \) 36. \(\langle 200 \) 37. \(\langle 200 \) 38. \(\langle 200 \) 39. \(\langle 200 \) 30. \(\langle 200 \) 30. \(\langle 200 \) 31. \(\langle 200 \) 33. \(\langle 200 \) 36. \(\langle 200 \) 37. \(\langle 200 \) 38. \(\langle 200 \) 39. \(\langle 200 \) 30. \(\langle 200 \) 30. \(\langle 200 \) 30. \(\langle 200 \) 31. \(\langle 200 \) 32. \(\langle 200 \) 33. \(\langle 200 \) 36. \(\langle 200 \) 37. \(\langle 200 \) 38. \(\langle 200 \) 39. \(\langle 200 \) 30. \(\langle 200 \) 30. \(\langle 200 \) 30. \(\langle 200 \) 30. \(\langle 200 \) 31. \(\langle 200 \) 32. \(\langle 200 \) 33. \(\langle 200 \) 34. \(\langle 200 \) 36. \(\langle 200 \) 37. \(\langle 200 \) 38. \(\langle 200 \) 39. \(\langle 200 \) 30. \(\langle 200 \) 30. \(\langle 200 \) 30. \(\langle 200 \) 31. \(\langle 200 \) 32. \(\langle 200 \) 33. \(\langle 200 \) 34. \(\langle 200 \) 35. \(\langle 200 \) 36. \(\langle 200 \) 37. \(\langle 200 \) 38. \(\langle 200 \) 39. \(\langle 200 \) 39. \(\langle 200 \) 30. \(\langle 200 \) 30. \(<u> </u>	 				
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5. \(\frac{20}{20} \) \(\frac{27}{20} \) 6. \(\frac{20}{20} \) \(\frac{28}{28} \) 7. \(\frac{20}{20} \) \(\frac{29}{30} \) 8. \(\frac{20}{20} \) \(\frac{20}{30} \) 9. \(\frac{70}{20} \) \(\frac{200}{30} \) 10. \(\frac{20}{20} \) \(\frac{200}{32} \) 11. \(\frac{20}{20} \) \(\frac{200}{35} \) 12. \(\frac{20}{20} \) \(\frac{200}{35} \) 13. \(\frac{20}{20} \) \(\frac{200}{36} \) 14. \(\frac{20}{20} \) \(\frac{200}{37} \) 16. \(\frac{38}{38} \) 17. \(\frac{39}{40} \) 18. \(\frac{40}{41} \) 21. \(\frac{20}{43} \) 22. \(\frac{20}{41} \) 14. \(\frac{20}{43} \) 22. \(\frac{41}{44} \) 23. \(\frac{20}{44} \) 24. \(\frac{20}{43} \) 25. \(\frac{41}{44} \) 26. \(\frac{41}{44} \) 27. \(\frac{41}{44} \) 28. \(\frac{20}{30} \) 39. \(\frac{41}{44} \) 39. \(\frac{41}{44} \) 39. \(\frac{41}{44} \) 31. \(\frac{42}{43} \) 31. \(\frac{42}{43} \) 32. \(\frac{43}{44} \) 33. \(\frac{41}{44} \) 34. \(\frac{42}{43} \) 34. \(\frac{42}{43} \) 35. \(\frac{41}{44} \) 36. \(\frac{41}{44} \) 37. \(\frac{42}{43} \) 38. \(\frac{41}{44} \) 39. \(\frac{41}{44} \) 30. \(\frac{41}{44}		 				
6. < 20		 				
7. \(\) 20 \(\) 200 \\ 8. \(\) 20 \(\) 200 \\ 9. \(\) 20 \(\) 200 \\ 10. \(\) 20 \(\) 200 \\ 11. \(\) 20 \(\) 200 \\ 13. \(\) 20 \(\) 200 \\ 13. \(\) 20 \(\) 200 \\ 13. \(\) 20 \(\) 200 \\ 13. \(\) 20 \(\) 200 \\ 13. \(\) 20 \(\) 200 \\ 13. \(\) 20 \(\) 200 \\ 15. \(\) 26 \(\) 200 \\ 16. \\ 17. \\ 18. \\ 40. \\ 18. \\ 21. \\ 21. \\ 21. \\ 22. \\ 144. \\ 15. \(\) 200 \\ 41. \\ 22. \\ 15. \(\) 200 \\ 41. \\ 42. \\ 21. \\ 21. \\ 22. \\ 15. \(\) 200 \\ 44. \\ 15. \(\) 200 \\ 44. \\ 16. \\ 40. \\ 41. \\ 42. \\ 21. \\ 21. \\ 22. \\ 44. \\ 15. \(\) 200 \\ 44. \\ 16. \\ 45. \\ 46. \\ 47. \\ 47. \\ 48. \\ 49. \\ 40. \\ 40. \\ 40. \\ 40. \\ 40. \\ 41. \\ 40. \\ 41. \\ 42. \\ 44. \\ 44. \\ 45. \\ 46. \\ 47. \\ 47. \\ 48. \\ 49. \\ 40. \\ 40. \\ 40. \\ 40. \\ 40. \\ 40. \\ 41. \\ 40. \\ 41. \\ 41. \\ 42. \\ 44. \\ 45. \\ 46. \\ 47. \\ 47. \\ 48. \\ 49. \\ 40. \\ 40. \\ 40. \\ 40. \\ 40. \\ 40. \\ 40. \\ 40. \\ 40. \\ 40. \\ 41. \\ 42. \\ 44. \\ 45. \\ 46. \\ 47. \\ 47. \\ 47. \\ 47. \\ 48. \\ 49. \\ 40.					-	
8. < 20 < 200 30. 30		 \ <i> </i>	<u> </u>	7		
9. \(\alpha \) 70 \(\alpha \) 200 \\ \text{31.} \\ \text{10.} \(\alpha \) 20 \(\alpha \) 200 \\ \text{33.} \\ \text{12.} \(\alpha \) 20 \(\alpha \) 200 \\ \text{13.} \(\alpha \) 20 \(\alpha \) 200 \\ \text{15.} \(\alpha \) 20 \(\alpha \) 200 \\ \text{15.} \(\alpha \) 20 \(\alpha \) 200 \\ \text{15.} \(\alpha \) 200 \\ \text{16.} \\ \text{16.} \\ \text{18.} \\ \text{16.} \\ \text{18.} \\ \text{19.} \\ \text{19.} \\ \text{19.} \\ \text{20.} \\ \text	//	1 / /		13		,
10. < 20		1 1 /				
11		1-1/				
12. < 20		 		\ <u>-</u>		
15 & 20 & 200 14 & 20 & 200 36 15 & 26 & 200 37 16. 38. 17 18 40. 41 42 21. 22. Date Reviewed: 11/1/68 RS Supervision: J. times () Sulling and the sulling and						
14 < 20 < 200 15 < 26 < 200 37. 16. 38. 17. 18. 40. 41. 42. 21. 22. Date Reviewed: [1/1/98] RS Supervision: J. Kwell Swell Swell Date Reviewed: [1/1/98] RS Supervision: J. Kwell Swell Date Reviewed: [1/1/1/98] RS Supervision: J. Kwell Date R		/: //			12	
15. \(26 \) \(200 \) \(37. \) \(38. \) \(17. \) \(39. \) \(18. \) \(40. \) \(41. \) \(21. \) \(21. \) \(22. \) \(43. \) \(22. \) \(21. \) \(23. \) \(24. \) \(24. \) \(24. \) \(24. \) \(24. \) \(27. \) \(28. \) \(10	
16. 38. 39. 40. 41. 41. 42. 42. 43. 42. 43. 44. Date Reviewed: 11/1/98 RS Supervision: J. Vinul 1 Sull 1		1 / 1 / 1				
17. 39. 40. 41. 41. 42. 42. 43. 43. 43. 44. Date Reviewed: 11/1/98 RS Supervision: J. Fand 1 Sall	116 5	1 / 1				
18. 40. 41. 41. 42. 42. 43. 43. 22. 44. Date Reviewed: 11/1/98 RS Supervision: J. Final 1 Swill 1	17	1 / 1				
21. 22. Date Reviewed: 11/1/98 RS Supervision: J. Final Sull	1) ————————————————————————————————————					\
21. 22. Date Reviewed: 11/1/98 RS Supervision: J. Final Sull		1 / -	41			
Date Reviewed: 11/1/98 RS Supervision: J. Fewer Swill		1/	42.			
Date Reviewed: 11/1/198 RS Supervision: J. Fewer Swill	21.	1/	43.			
Oate Reviewed: 11/1/198 RS Supervision: J. Fint Name Signature			44.			
Date Reviewed: 1111178 RS Supervision: J. 1000 J. 1000 Signature	11/1/16	B 1 1 11	51	10		
1384	Date Reviewed: 1417198 RSS	Supervision: J. WW	Signature	V . <u>I </u>	1_	-
	1384	PHIL INAME	2tRimme.			

RADIOLOGICAL SAFETY Drawing Showing Survey Points Radiological Operations Area or Equipment Drawing Showing Survey Points Tent 11

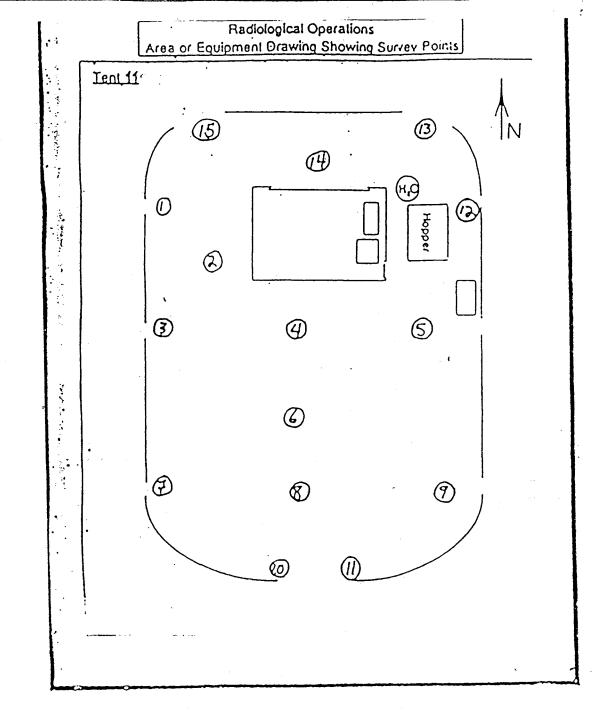


Page 1_ of 24NFORMATION ONLY						RS FORM	RS FORMS 07.02-01			
		ROCE	CY FLAT	SENVIRONME	NTAL TEC	HNOLOG	Y SITE			
INSTRUMENT DATA										
	Afg.EBERLINE_ Mfg.EBERLINE			~ K/	Survey Type: CONTAMINATION					
			SAC-4		Building: 904					
13				Serial # Bc 916	Location: TENT 11					
			3.16.99							
			0.0		RWP#:					
11			cy <u>33%</u>		KWP#:					
IVID.	~ Zoapi	MDA_	20 dpm	MDA 200den	Date: 11-1	11-98	Time: 1336			
Mfg	g.EBERLINE Mfg.NE.TECI		TECH	Mfg.NE.TECH	Mfg.NE.TECH Date: 11-11-98			Time		
			ELECTRA			1402 1°	Milio			
	ial # <u>Bc 838</u> Serial #\s		Serial #	Pri	nt name	Signature C				
,,	Due 1-9-99 Cal Due Cal Due				an f	1-11-98				
	g. 42 Bkg. Bkg. Bkg. Efficiency			RCT:						
			cy —	Efficiency	Pri	nt name	Signature	Emp. #		
PRL#: - a 11-11-98										
Comments:										
				SURVEY R	ESULTS					
	REMO	REMOVABLE DIRECT			REMOVABLE DIRECT					
	ALPHA BETA		ALPHA	BETA	ALPHA BETA		ALPHA BETA			
				\wedge						
1:	620	4200		23						
2.	620	<u> </u>		24		<u> </u>				
3. 4.	L20	200	9	25			1			
5.	420	4200	- W	27						
6.	620	<200	7	28						
7.	۷20	د200		29						
8.	420	¿200	7	30						
9.	wo	6200	1	31		6				
10.	420.	دی ه	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	32						
1:	120	4200	7	33			*			
12.	620	L200		<u> </u>			-			
۱۵.	420	2200		35			150			
14.	120	1200	/	36						

15. 620 6200 37. 16. 38. 39. 17. 18. 40. 41. _ _42. 21. ______22. ____ 43. Date Reviewed: 11/17/48 RS Supervision Z. J. Eavell
Print Name

1386

RADIOLOGICAL SAFETY



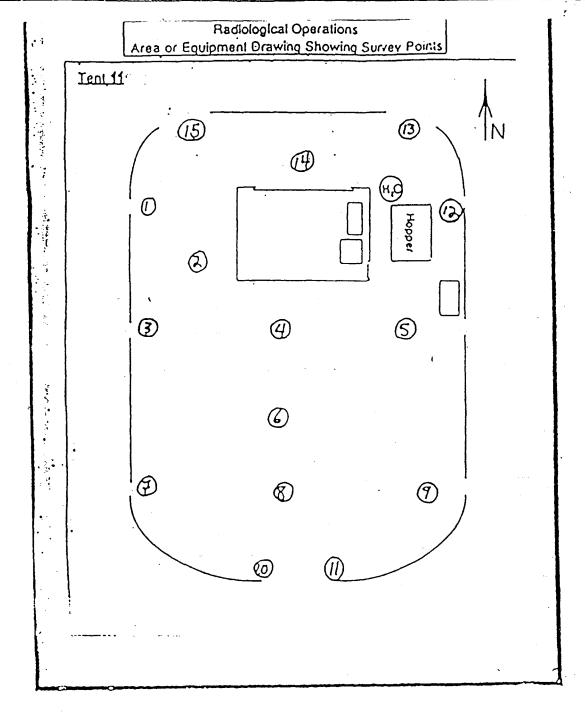
Page L of 2 MICODRANTION ONLY

	I CHIMINE	TEXTR CLEAN						
ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE								
INSTRUMENT DATA								
Mfg.EBERLINE_	Mfg.EBERLINE_	Mfg.EBERLINE_	Survey Type: CONTAMINATION					
Model SAC-4	Model SAC-4	Model SAC-4	Building: 904					
Scrial # 824_	Serial #	Serial # 9/6	Location: TENT 11					
Cal Due 3-21-99	Cal Due 3-/6-99	Cal Due 3.16-99	Purpose: WEEKLY SUEVEY					
Bkg. <u>0.0</u>	Bkg. 0.0	Bkg. 43						
Efficiency 33/6	Efficiency 336	Efficiency 25%	RWP #:					
MDA ZXO	MDA CZO	MDA 1200	1 22					
			Date: //-/9-98 Time: //00					
Mfg.EBERLINE	Mfg.NE.TECH	Mfg.NE.TECH						
Model BC-4	Model ELECTRA_	Model ELECTRA	RCT: Whyoz Mino					
Serial # 838		Serial #	Print name Signature					
Cal Due 1-9-19	Cal Due	Cal Due	- a 11798					
Bkg. 39	Bkg		RCT:/					
Efficiency 25%	Efficiency		Print name Signature Emp. #					
MDA _ 200	MDA	MDA						
PRL#:								
Comments:								

				SURV	EY RESU	LTS			
	REMOVABLE		DIRECT			REMOVABLE		DIRECT	
	ALPHA	BETA	ALPHA	BETA		ALPHA	BETA	ALPHA	BETA
۱.	120	1200 5			, 23.				
2.	120	4200			24.				
3.	120	2200			25.				
١.	420	2200			26.				
5.	120	4200			27.				
j.	420	2200			28.				·
1.	420	400			29.				
}.	40	4100	V	/_	30.				
).	40	1200	V	A .	31.				
0.	420	1200		4/2	32.				
1	420	400		K.	33.				
2.	220	200		1	・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・				
٠. د	420	Ldoo			35.		1/4 30		
	220	2200			36.			\	
	1,20	2200			37.				
Ç./					38.				
7.					39.				
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2					41.				
		1110			42.				
1.		188			43.				<u> </u>
2					44				
	Reviewed: 11/	19/48 RSS	pervision:	ien of	Signa	Eure	11		

RADIOLOGICAL SAFETY

Drawing Showing Survey Points



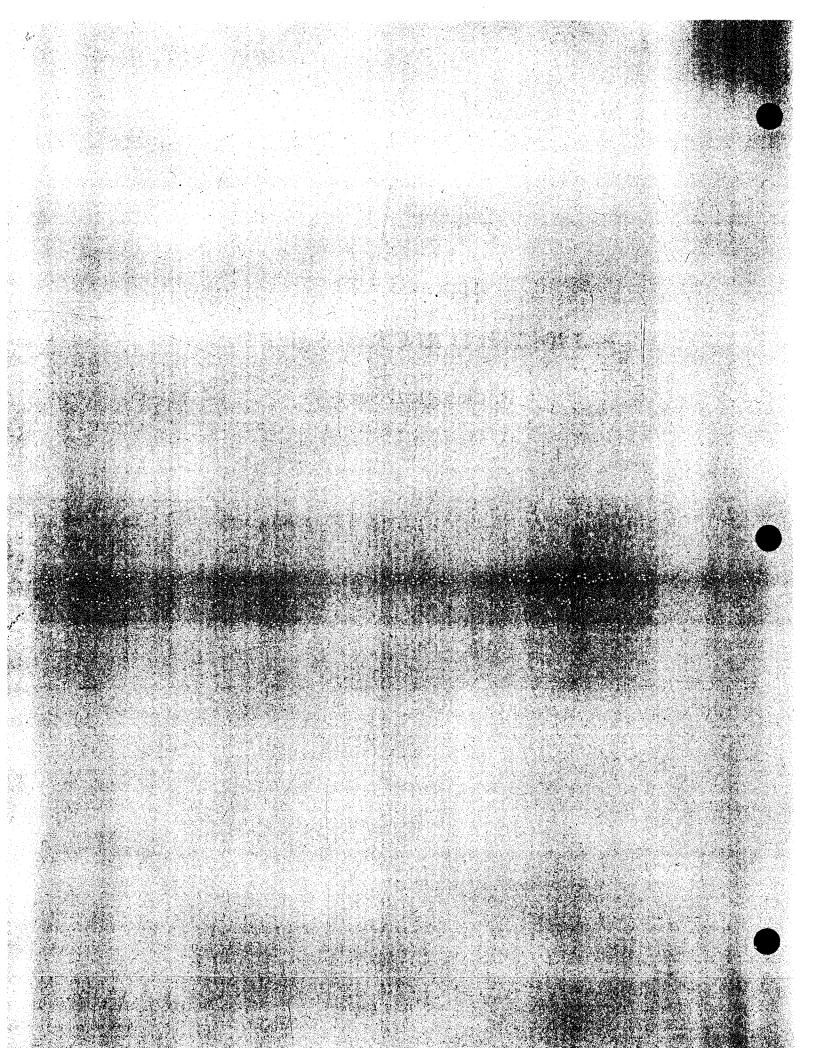
20 6	F 1 6		 .		•		•	•	
ີ ກ/	CENT	er and re	NVIRONA	AUDITATI	TITL	CEINIO	YC	CV	CITE
K.	ICA Y P	LAINE	IVVIKOIW	<i>TENIX</i> L			LU	<i>'</i> U' <i>'</i>	

Bkg. O./ Efficiency 33/6 MDA	Model SAC-4 Serial # 796 99 Cal Due 3-16-99 Bkg: ©.0 Efficiency 33% MDA	Serial # 9/6 Cal Due 3-/6-99 Bkg. 4.3 Efficiency 25/6 MDA 4-6-6 Mfg.NE.TECH Model ELECTRA Serial # Cal Due Bkg. Efficiency	Survey Type: CONTAN Building: 904 Location: TENT Purpose: WEEL RWP #: Date: 11-23-98 RCT: NJUGSZ Print name RCT: Print name	Time: 1100 Signature Emp.
Comments:		SURVEY R	REMOVABLE	DIRECT
ALPHA	BETA ALPH	A BETA	ALPHA BETA	ALPHA BETA
1. \(\lambda \text{LDO} \) 2. \(\lambda \text{LDO} \) 3. \(\lambda \text{LDO} \) 4. \(\lambda \text{LDO} \) 5. \(\lambda \text{LDO} \) 6. \(\lambda \text{LO} \) 7. \(\lambda \text{LO} \) 8. \(\lambda \text{LO} \) 9. \(\lambda \text{LO} \) 10. \(\lambda \text{LO} \) 11. \(\lambda \text{LO} \) 12. \(\lambda \text{LO} \) 13. \(\lambda \text{LO} \) 14. \(\lambda \text{LO} \) 15. \(\lambda \text{LO} \) 16. \(\lambda \text{LO} \) 17. \(\lambda \text{LO} \) 18. \(\lambda \text{LO} \) 19.	1200 1200 1200 1200 1200 1200 1200 1200 1200 1200 1200 1200 1200 1200 1200 1200	28 29 30 3 33 32 33	4	

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE RADIOLOGICAL SAFETY **Drawing Showing Survey Points** Radiological Operations Area or Equipment Orawing Showing Survey Points Tent.11" (15) **(3) (4) (3**) 3 3 (5) 4 **((1)** 8 9 0

Appendix F.2 Pad 904 Tent 11 RLC Radiological Data

Appendix F.2.1 Pad 904 Tent 11 RLC Radiological Data Radiological Surveys



WARD BEATT EVERY OVER THE ROCKY FLATS ENVIRONWENTAUL TECHNOLO RADIOLOGICAL SAFETY Drawing Showing Survey Points Location Door-C-51 (18 (19 13. # 25 -(10) 8 22 31. 32. 33. 34. 37. - height from ground

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE **EXAMPLE 1** INSTRUMENT DATA Mfg. EBERLINE Mfg. EBERLINE MfgEBERLINE Survey Type: Contamination Survey Tent # 11 Model BC-4 Model BC-4 Model SAC-4 Building: Serial # 838 Serial # 874 Serial # 959 Location: - 904 Pad Cal Due7/13/99 Cal Due 6/7/99 Cal Due 7/5/99 Purpose: CHARACTERIZATION SURVEYS Bkg. 41 Bkg. 38 Bkg. 0.0 RWP#: $- \mathcal{N} \mathcal{A}$ Efficiency 25% Efficiency 25% Efficiency 33% MDA <200 MDA <200 MDA <20 Date: 04-06-99 Time: 15.20 Mfg. EBERLINE • Mfg. NE TECH Mfg.NE TECH Model SAC-4 Model ELECTRA Model ELECTRA RCT: Rev Sauser Signature Serial # 1188 Serial # 2343 Serial # 2347 Print name Cal Due 6/16/99 Cal Due 8-12-99 Cal Due 8-12-99 Bkg. O./ Bkg. \alpha 2 Bkg. \body 505 RCT: Efficiency 33% Efficiency 22.0% Efficiency 32.0% Print name Signature Emp. # MDA <20 MDA 43 MDA 32/ PRL#: Comments All Results Are In dpm/100cm2

SURVEY RESULTS

					and the second second	رد از از استاده دهاههید استان استان ا از از استاده دهاههای استان استان استان استان استان استان استان استان استان استان استان استان استان استان استان	marka da da da da da da da da da da da da da
Ren	novable	Dire	ect	Reme	ovable	Direc	x
Alpha	Beta	Alpha	Beta	Alpha	Beta	Alpha	Beta
1. < 26	<u> </u>	_84_	<u> <32/</u>	23. < 20	< 266	60	c32/
2. <u>< ₁0</u>	4 200	66	<u> </u>	24. < 20	< 200	<u>~ 43</u>	× 321
3. <u>< 20</u>	4 200	< 43	× 321	25. <u>< 10</u>	< 200	<u> < 43 </u>	x 327
4. د کو	4 200	54	4321	26. <u>* 20</u>	< 200	60	< 32/
5. <u>< 28</u>	< 200 <u> </u>	_72_	435	27. * 20	< 200	< 43	< 32/
6. <u>5.26</u>	< 200	- 443	× 321	28. <u>* 10</u>	< 200	× 43	4321
7. <u>< 20</u>	4 200	60_	<32/	29. 4 20	< 200	× 42	× 32/
8. < 20	4 200	× 43	<u>≺ 32/</u>	30. <u>< 20</u>	< 200	78	< 32/
9. <u>< >0</u>	4 200	54_	< 32/	31			
10. <u>< 28</u>	4200	90	< 32/	32.			
11. <u>≤ 20</u>	4 200	∠43	<u> </u>	33			
12. <u>< 28</u>	< 208	48	432/	34		<u> </u>	
13. <u>< 20</u>	< 200	- < 43	4321	35		· · · · ·	
14. <u>< 20</u>	4200	₹ ¥3	× 32/	36			
15. <u>く みの</u>	< 200	<u> < 43</u>	< 32/	37		Α	
16. 5.20	4 200	443	<u> </u>	38			
17. <u>< 28</u>	4 200	< 43	<u> 4321</u>	39			
18. <u>く み</u> る	× 288	48	< 321	40			
19. < 20	4200	48	<u> ≺32/</u>	41			<u> </u>
20. 5 20	< 200	60_	<u> < 32/.</u>	42			\
21. < 20	× 208	< 43	< 32/	43			
22. 20	<u>4 200</u>	<u>~54</u>	(<u>1832/</u>	44		21	
<u>D</u> ate	4-8-99	RS Superv	vision: G	- OSBURN	1 July	Cohum	
1394	n George			rint Name	77.7	Signature	Emp. #

Emp.#

Print name

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

Mfg. EBERLINE	Mfg. EBERLINI	E MIGEBERLINE"	Survey Type: Contamination Sur
Model BC-4	Model BC-4	Model SAC-4	Building: TENT # //
Serial # 838	Serial # <u>874</u>	Serial #959	Location: 904 PAD
Cal Due7/13/99	Cal Due 6/7/99	Cal Due 7/5/99	Purpose: CHARACTERIZATION SURVEYS

Bkg. __ 39 Bkg. 38 Bkg. 0.2 Efficiency 25% Efficiency 25% Efficiency 33% RWP#: NA

MDA <20 MDA <200 MDA <200 __ Time: 1600 Date: 04- 27-99

Mfg. EBERLINE 'Mfg. NE TECH Mfg. NE TECH Model SAC-4 Model ELECTRA Model ELECTRA RCT: Rex SnyDER Serial # 1188 Serial # /682 Serial # /682 Cal Due6/16/99 Cal Due 8-/2-99 Cal Due 8-/2-99 Bkg. 3.2 Bkg. 3 Bkg. 496 RCT:

Efficiency 33% Efficiency 22.3% Efficiency 3/1/2 Signature Print name MDA <20 MDA 49 MDA 318

PRL#: eilings - Walls + Building Systems Comments

All Results Are In dpm/100cm2

SURVEY RESULTS

.			A STATE OF THE STA	· · · · · · · · · · · · · · · · · · ·	erennengig, groen i vandig -	The second secon	rigida (j. 1848)
Re	emovable	Dir	ect	Ren	novable	Dire	ct
Alpha	Beta	Alpha	Beta	Alpha	Beta	Alpha	Beta
1. < 20	< 260	< 49		~ 20 ~ 20	< 208 < 208	< 49 < 49	< 7/8 < 7/8
2. < 28	1 700	< 49	3/8 .24.	20.	1 208	< 49	2 318
· 3. 1 20	< 700	4 49	4 7/8 25.	× 20	1 200	< 49	4 3/8
4. < 23	200	49	<u> </u>		7.08	49	4 3/8
5. <u>20</u>	200	49	<u> 318</u> 27.	1 20	1 100	1 49	× 318
0.	1 200	49	<i>₹ 379</i> 28.	20	< 200	4. 49	1 3/8
7. < 26	- 1 200	< 49	<u>4 3/8</u> 29.4		< 208	1 49	5 3/7
8. 1 20	200	49		()0	200	49	1318
	7.00	49	<u> </u>	<u>₹. 24</u>	200	49	1318
	200	49		(20	1 200	49	4.5/8
• 11. <u>• 20</u>	- 1200	49	<i>₹378</i> 33. °		7.60	1 49	4 3/8_
12. <u>23</u>	- 1200	49	<u>34.</u>		1 200	48	4 318
14. 120	200	40		< .20	1 708	4/8	-3/8
15. 1 20	1 200	44		< ZO	208	4 48	< 3/8 N
• 16, <u>2</u>		47	4 3/8 37.	<u> </u>	1 200	< 48	(467)
17. < 20	700	1 1/2	4. 3/8 38.		1 200	49	₹ <u>3/€</u>
• 18. < ≥0	1 200	71	39.	< 28	200	449	4-7/8
19. 7 26	1 200	~ 7(< 4,8	37Z) 40.		208	< 49	1-3/8
·20. 1 20	700	-7/ - u 9	41.	20	< 200 ···	4.9.	7/8
21. 4 20	200	: 49	4 3/8 42.	4 70	1 708	29	4318
22. 1/20	1 Z03	1 249 10	43. 43/8 44.	< 20	< 78B	< 49	J
Date ,	4/28/99	RS Super		20.0	7	TI Tool	
39 U	1/2011	Ko Duper	Vision. Print Nar	ne .		Signature	
<u> </u>		The State of the S	The state of the s		promote programme of group description of a	· STATE OF THE MANAGEMENT OF STATE	AND THE PERSON OF PROPERTY AND

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SIT

RADIOLOGICAL SAFETY Drawing Showing Survey Points

<u> </u>	rawing Showing Survey	Points	
Location		Cilia Walls 1	Building Systems 2 meter
1. Light	- Tent #11	Centag - want F	soliding Lysians
2. HEAT EL		the state of the s	~ MCTEX
3 Center Support	_	(In)	
4. 11-18 Burner		(n)	
5. Heat WY	The second secon		The second second
6 Cames W3			— (P)
7. Heat wy		(45)	
8. <u>Pipe 10'</u>			
9. Heat			
10. Speaker			
(1) Canvas E 4 20			I E V meio
12 -11-3 Burner			A removed the
(3) Center Support El			
14. Pipe 10" 15. Heat El			199
6 Canus 10			2 and and area.
17. Top tent West		φ (35) φ	3
	<u> </u>	Sim Of Vine	10100
18 Center Support WY 19. 11-15 BURNER		b - b	(30)
(20) Canvas 12' WP			
21. Speakers		P	(3)
22. XPaT			
23. Weat	See silver		
(24) COMVAS WII		$\phi \sim \phi$	(b)
25. Heat Ell			
(26) Senter Support \$10			
27. Heat	- (29)	•	
28		6 - 6	(2) E
29. Speaker 30. 11-6 Burner	— · · · · · · · · · · · · · · · · · · ·		
31. 11-3 BURNER	-	P	1 41
32 Canucs E 14			
33 Fige 12'		P 1.	
34. Heat E17	-	(6)	· (3)
(35) Permecon Top		φ	
36. speaker			
37. Heat		p W P	
38. Pipe 10'		b b	
(39) Permocon Top	Signature and the second of th	3	
40. Heat 1118		³ Ø	
41. Heat W 20			<i>.</i>
(42) · Canvas 20: 22/23			
43. Heat £ 20.			
44. Hopper			
(45) Top Permacon		The second secon	· H
201		real grant Section 1997	

ROCKYFLATSENVIRON	VIENEEN EER GINTO EO COVINTEE
INSTRUMENT DATA	
Mfg. EBERLINE Mfg. EBERLINE MfgEBERLINE	
Model BC-4 Model BC-4 Model SAC-4	The second of th
Nodel BC-4 Model BC-4 Model SAC-4 Serial # 838 Serial # 874 Serial # 959	T
Cal Due 7/13/99 Cal Due 6/7/99 Cal Due 7/5/99	7 () () () () () ()
Bkg. 44 Bkg. 40 Bkg. 0.1	Turpose salada antione de la companya de la company
Efficiency 25% Efficiency 25% Efficiency 33%	DWD# NA
MDA <200 MDA <200 MDA <20	RWI #, IVA
NBT 200 NBTV 20	Date: 05-03-99 Time: \(\sqrt{8:20} \)
Mfg. EBERLINE Mfg. NE TECH Mfg. NE TECH	
Model SAC-4 Model ELECTRA Model ELECTRA	RCT: Rex SMYDERI ZITAL
Serial # 1188 Serial # /682 Serial # /682	Print name Signature
Cal Due 6/16/99 Cal Due 9-12-99 Cal Due 8-12-99	ν -
Bkg. 6.3 Bkg. / Bkg. 515	
Efficiency 33% Efficiency 21.3% Efficiency 34.1%	Print name Signature Emp. #
MDA <20 MDA 34 MDA 324.	A Company of the Comp
PRL#:	
Comments Survey Locations on Floors+1	able < 2 meters + scan (meter at
All Results Are In dpm/100cm2	
An Acsuits Are in apin/100cm2	
SURVEY	RESULTS
Removable Direct	Removable Direct
Reta Alaba Reta	
	Alpha Beta Alpha Beta
THE SECOND SECON	Alpha Beta CAlpha Beta 23 Alpha Beta 25 Alph
23 <u>450 63 (COME</u> 43 SY TO COME	23 2 26 4 200 9 198 2 775 4 24 20 4 200 3 200 3 39 1 2 2016 8
2. (2.0) (3.4) (3.4) (3.4) (3.4)	73 2 70 2 708 4 48 475 24 4 20 4 5 200 3 34 5 70/6 PS 25:4 20 4 208 54 92/
2. 200 200 34 324 4. 200 200 34 4324 4. 200 200 34 4329	23 2 20 2 200 4 198 47/5 15 24 4 20 4 3 200 3 39 5 70/6 25 25: < 20 4 200 54 82/ 26. < 20 < 200 < 34 7/94
2. (2.0) (3.4) (3.4) (3.4) (3.4)	23: 2.20
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	23
2 20 200 34 724 3. 20 200 34 724 4. 20 200 34 724 6. 20 200 34 324 7. 20 200 34 324 8. 20 200 34 724 9. 20 200 34 724 9. 20 200 34 724	23: 230 2706 9 18 47/53 24: 201 200 374 10/11 PS 25: 20 4 206 54 82/ 26: 20 4 206 34 1/94 27: 420 4200 374 804 28: 420 4200 434 882 29: 420 4200 434 93/ 30: 420 4200 434 93/ 31.
2 20 200 34 724 3. 20 200 34 724 4. 20 200 34 724 5. 20 200 34 724 6. 20 200 34 324 7. 20 200 34 324 8. 20 200 34 724 9. 20 200 34 724 10. 20 200 34 724 10. 20 200 34 724	23
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	23 2 20 2 20 4 20 4 20 54 82/ 25 4 20 4 20 6 54 82/ 26 4 20 4 20 6 34 7/94 27 4 20 4 20 6 34 804 28 4 20 4 20 6 34 882 29 4 20 4 20 6 34 93/ 30 4 20 4 20 6 34 93/ 31 32 33 33
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	23
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	23 2 20 2 200 4 19 4 1/5 25 20 4 200 5 4 9 7 1/5 25 25 4 20 4 200 5 4 9 7 1/94 27. < 20 4 200 4 34 882 29 < 20 4 200 4 34 932 30. < 20 4 200 4 34 864 31. 32. 33. 34. 35. 36.
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	23
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	23: 220
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	23: 220
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	23: 220
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	23 2 20 20 4 20 4 20 54 82 7 7 8 2 7 8 8 4 8 8 2 8 2 8 8 2 8 8 2 8 8 2 8 8 2 8 8 2 8 8 2 8 8 2 8 8 2 8 8 2 8 8 2 8 2 8 8 2 8 8 2 8 8 2 8 8 2 8 8 2 8 8 2 8 8 2 8 8 2 8 8 2 8 8 2 8 2 8 8 2 8 8 2 8 8 2 8 8 2 8 8 2 8 8 2 8 8 2 8 8 2 8 8 2 8 8 2 8 2 8 8 2 2 8 2 8 2 8 2 8 2 8 2 8 2 8 2 8 2 8 2 8 2 8 2 8 2 8 2 8 2 8 2 8 2 2 8 2 8 2 8 2 8 2 2 8 2 2 8 2 2 8 2 2 8 2
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$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	23: 2. 20
2. 200 34 32	23: 220



24	ROCKY FLATS ENVIRONMENTAL TECHNOLOGY STILL										
	INSRUME	NT DA'	ΓA ,		• • • • • •	J	The State of the S		nakatenni, j	2	
Mf	g. <u>Ebecliac</u> Mfg. <u>Ebecli</u>	ne l	Mfg. E	berlin	<u></u>	Su	rvey Type: Contany	natio	u 5	Lecus	24
	del SAC 4 Model SAC	-4-1	Model_	RC 4	<u> </u>	Bu	lding: Tent # 11	Perma	COK		
.,	ial#_959 Serial#//					Lo	cation: 904 Pad				
	Due 7-5-99 Cal Due 6-1				<i>99</i>	Pur	pose: Characterizatio	n Su	rucy		
	g. <u>0.2</u> Bkg. <u>0.0</u>		~		 .				• .		
	ciency 33% Efficiency 3					RW	P#:				
ML	DA 20 MDA 20		MDA _	20	0		- -0				
ME	a Shitted MEG UT =	- / x	/f~ /	· /		Dat	e: 04-07-99	Time:	160	<u> </u>	
Mo	g. <u>Fbetline</u> Mfg. <u>NE</u> del <u>RC-4</u> Model <u>Fle</u>	ech 1	viig. <u>^</u>	1 1 1 CC	<u></u>	PC	TO COSTA	_	0	1	
	ial# 874 Serial# 23					INC	T: Rex SayDER / Print name	5:0	nature		
1.	Due $4-7-99$ Cal Due $9-7$		_				I fine name	J. J.	ilatorc		-
	3. 40 Bkg. 0					RC	Γ: -	X		/	
	ciency 25% Efficiency 22						Print name	Sign	nature		Emp. #
	A 200 MDA 49		ADA _						a Fra		•
		·	* 4 4 4 .					7	7		
PRI	•						the same of the sa				
Cor	nments: <u>Exterio</u>	<u>r Sc</u>	rucy	. :	Cou	old.	not occess Roof	top			
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						D D C					
4		т :		T	IRVEY	11		T		1	_
Swipe			ovable	 		Swip			ovable	 	otal
#	Results in DPM/100CM ²	Alpa	Beta	Alpa	Beta	#	Results in DPM/100CM ²	Alpa	Beta	Alpa	Beta
1	wall 3'	< 20	< 200	< 49	< 3/5	16	WALL 3'	< 20	1200	54	< 315
2	door "	× 20	< 200	< 49	× 315	17.	wall + ledge 7"	4 26	< 2∞	< 49	4 315
3	door 8'	< 20	< 700	< 49	K 315	18	axIl 8'	× 20	< 200	< 49	315
4	Windows ledge 4'	K 20	1 200	< 49	1 315	19	Pipes 2'	£ 20	Z 200	< 49	5 315
5	Window + above 7	< 20	< 700	× 49	4 315	20	wall + ledge 5"	< 20	< 200	< 49	K 315
. 6	wall + Ledge 8'	1	< 260	T			Wx11 8'	< 20	د الا	< 49	4 315
7	Wall 7'		4 266				Wx/1 4'	c 26	८ २०७	ł .	· 315
8		 	f		 						
	WALL 6	4 70	< 200	49	215	23	WALL 7'	4.20	1 200	4 49	1 315
Y 1	wall b'	 	< 700			23	WALL 7'	< 20 < 20	1 200		2315
9	wx/1 8'	120	< 200	< 49	< 315 _.	24	WALL 3	< 20	1 200	1 49	_ 315
10	Limil 8' DOOR 5'	120	< 200 < 268	< 49 < 49	< 315 < 315	24	Wall 3' Windows above 7'	< 20 < 20	1 200 1 200	2 49 2 49	< 3.\(7)
10	WALL 4's Ledge	< 20 < 70	< 200 < 200 < 200	< 49 < 49 < 49	< 315. < 315 < 315	24 25 26	Wall 8'	< 20 < 20 < 20	1 200 L 200 4 200	2 49 2 49 2 49	< 315 < 315
10 11 12	WALL 8' DOOR 5' WALL 4': Ledge WALL 8'	< 20	< 200 < 260 < 208 < 200	< 49 < 49 < 49	< 315. < 315 < 715 < 215	24 25 26 27	WALL 3' WINDOWS above 7' WALL 8' WALL + ledge 5'	< 20 < 20 < 20 < 20	1 200 L 200 L 200 L 200	2 49 2 49 2 49 2 49	< 315 < 315 < 315 < 315
10	WALL 4's Ledge	4 20 4 20 4 20 4 20 4 20	< 200 < 200 < 200	< 49 < 49 < 49 < 49	< 315. < 315. < 315. < 315. < 315. < 315.	24 25 26 27 28	Wall 8'	< 20 < 20 < 20 < 20 < 20 < 20 < 20	1 200 L 200 4 200	2 49 2 49 2 49 2 49 2 49	< 315 < 315

ate Reviewed: 4-8-99 RS Supervision:

G. E. OSBURN Print Name

Signature

CKY FLATS/ENVIRONMENTAL TECHNOLOGY SITE RADIOLOGICAL SAFETY Drawing Showing Survey Points Permacon Building IN Tent # 11 904 Pad \bigcirc (18 (6) 14 (12 (10) 9 7

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ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

	The state of the s	D DIVIDEOTIN	ENTAL TECHNOL	<u>odroffe</u>	
I	NSTRUMENT DA	TA		The second secon	A the second sec
Mfg. EBERLINE	_Mfg EBERLINE	3 MfgEBERLINE	The second secon	ntamination Surv	ev
ModelBC-4		_ ModelSAC-4		Permacon	
Serial #838	Serial #874	_Serial #959	Location: 904 PAD		
	Cal Due 6/7/99	Cal Due 7/5/99	Purpose: CHARACTERIZA	TION SURVEYS	
Bkg. 39	Bkg38		-		
Efficiency 25%	Efficiency 25%		RWP#:NA		
MDA_<200	MDA<200	_MDA<20			
		1	Date: 04-27-99	Time: 1500	
Mfg. EBERLINE		Mfg.NETECH	(H2000)	21	
Model SAC-4	Model ELECTRA	Model ELECTRA	RCT: Pex ShyDER 1	The funda	
Serial # 1188	Serial #	Serial # <u>/682</u>	Print name	Signature	
Cal Due <u>6/16/99</u>	Cal Due 8-/2-99	Cal Due F-/2-99		A	-
Bkg. <u>0.2</u>	Bkg3		RCT: N		-/
		Efficiency 31.1.76	Print name	Signature	Emp. #
MDA <20	MDA 49	MDA 3/8			•
	Collins .				

PRL#:

Comments Personal Survey Ciding + wells > 2 meter + walls < 2 meters

Il Results Are In dpm/100cm2

SURVEY RESULTS

	e production			He.			
11	emovable	Dir	ect	Rem	ovable	Dire	ct
Alpha	Beta	Alpha	Beta	Alpha 😁	Beta	Alpha	Beta
1. < 20	_ < 203_	<u> </u>	< 3/8 L	23 x 20	€ 206_	. 49	4 318
2. < 20	4 200	< 49	× 318	24 5 20	, 200	49	3/8
3. 20	_ 4_ 203_	49	< 38	25×4 20	1 208	. 49	318
4. 20	<u> </u>	49	3/8	26 1 20	1.200 .	· 49	< 3/8
5. <u>< 20</u> 6. <u>< 20</u>	4 700	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	1 318	27. < 20	< 200	49	< 318
7. 4 20	< 203 < 203	- 97 - 49	× 318	28. 10	< 200	< 49	< 318
8. < 20	1 200	· 49	< 318	29. < 20	200	< 49	<u> </u>
9. < 20	< 203	× 49	(<u>318</u>	30. < <u>7.0</u> 31. < 7.0	4 200	< 49 < 49	4 3/8
10. 4 28	< 20S	49	< 3/8	31. <u>< 70</u> 32.	<u> 200</u>	2 7 (1 3/8
11. <u>₹ 20</u>	< 2025	< 49	C 718	33.			
12. < 20	< <u>2003</u>	49	x 318	34.			
13. < 20	- 1 263	49	1318	35			
14.< 70° 15.< 20	288	47	1318	36	7	^	
15. <u>20</u>	. <u>700</u>	47	1 3/8	37		1	
17. 1 20	. <u>2003</u>	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	5 -0/5	38		<u> </u>	
8. < 20	108	< 49	< <u>318</u>	39	-#-		
19. 4 70	. < 300	• 49	< 2/k	40	1 1/4	<u> </u>	
20. < 24	· 200	< 49	< 218 ~	42			
21. 4 70	5 200	4 49	< 318	43.			\
22. < 20	× 200	< 49	4 311	44	10		
Date	4/28/99	RS Superv	rision:	Cooper	1 Am	Tillong	

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE RADIOLOGICAL SAFETY Drawing Showing Survey Points 3. Wall Vent 20 4. Wall 18' S. Calling 7. Will 150 8. Cerling Ceiling 9. Wall 12' Cedings + Walls 10. Ceiling 7 2 meters KONG 6.68

402

RS Supervision: Wesper

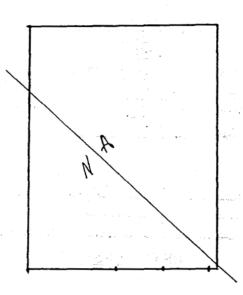
Print Name

Date

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

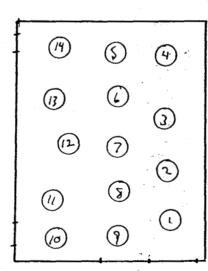
RADIOLOGICAL SAFETY

Drawing Showing Survey Points



1 to 14 = Floor

Floor Map



Appendix F.3

Pad 904 Tent 11 Historical Chemical Data

Appendix F.3.1

Pad 904 Tent 11 Historical Chemical Data

Beryllium

Appendix F.3.1.1

Pad 904 Tent 11 Historical Chemical Data

Beryllium

Sample Locations

Sample Locations Specification	ft. North/South: 335 ft.	Corresponding Random Sample Location Coordinates (East/West, North/South)	(48 (09)	-	(26,202)	(43 , 267)	(39, 97)	(3)	(2 , 307)	(43, 177)	(36, 27)	(26, 5)	(18, 274)	(31,330)	(33, 161)	(16.2)	(4)	(45, 242)	(30,93)	(4,1/3)	(1 , 273)	(59,79)	(44, 153)	(10,34)	(29)	(59, 270)	(26, 162)
	Vest: 60	Generated Random Numbers E/W N/S	0.250	0.124	0.604	0.798	0.290	0.212	0.917	0.528	0.214	0.014	0.817	0.837	0.482	0.062	0.518	0.664	0.277	0.336	0.816	0.533	0.457	0.102	0.730	0.805	0.484
114	East/West:	Gene Random E/W	0.992	0.346	0.426	0.711	0.646	0.048	0.028	0.718	0.601	0.433	0.305	0.519	0.551	0.263	0.070	0.743	0.496	0.072	0.013	0.986	0.734	0.172	0.479	0.977	0.425
Coordinate Sheet Number:	Room Dimensions:	Sample Number	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	20
Coordi	10nt 11	Corresponding Random Sample Location Coordinates (East/West, North/South)	(8tt.	, 276)	. 99)	50	32/80	, 36	, 1357	, 335)	3,5	119.	()	, 205)	, <u>217</u>)	142)	(()	, 171)	. 33	(-4	, 138)	337	, उ०१)	,	, 79)	, 299)	303
	Room Number::	Correspond Sample Locat (East/West,	(37) [3]	7	(0)	(3,1	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	7	(25 ()	950)	64)	7	9)	(038	(38	() ()	7	(40	(40	α (`	+()	7+(-)	74	000	()	(m)
Program	Ro Ro	ated umbers N/S	0.682	0.823	0.235	0.149	0.539	0.106	0.404	0.836	0.940	0.354	0.017	0.611	0.648	0.423	0.111	0.509	0.989	0.147	0.411	0.714	0.920	0.022	0.235	0.892	0.901
Beryllium Characterization Program	+	Generated Random Numbers E.W N/S	0.619	0.091	0.196	0.858	0.520	0.515	0.115	0.413	0.932	0.814	0.200	0.310	0.878	0.641	0.083	0.203	0.662	0.659	0.419	0.238	0.773	0.735	0.325	0.254	0.629
Beryllium Cł	Building Number:	Sample Number	-	2	ო	4	ς.	Θ	7	ω	თ	10	7	12	13	4	15	16	17	8	19	20	21	22	23	24	25

Sample Locations Specification Ħ. North/South: (2) 5,2 (4) (D) (18 ₿ 59,270 £ 0 East/West: ون در پر Room Dimensions: 7/35 NAP NOT to Score 13 1113 Room Number:: 12MT 3,50 904 Rd II approx laft 0,0 Building Number: Sketch of General Room Layout location of doors.] coordinate origin, and approximate North for sketch. point (0, 0), Using Coordinate approximate direction of Indicate [Indicating Number: Sheet

Beryllium Characterization Program

Appendix F.3.1.2

Pad 904 Tent 11 Historical Chemical Data

Beryllium

Laboratory Report

MAY 26 '99 14:33 FR MTC IH LAB

303 978 3005 TO 93039664555

P. Ø2





COVER PAGE

May 26, 1999

Johns Manville Corporation 10100 W. Ute Avenue (80127) P.O. Box 625005 Littleton, CO 80102-5005 503 578 2000

Rocky Flats Environmental Technology Site

Mr. Roger Cichorz

P.O. Box 464, Building 881 Golden, CO 80402-0464 Laboratory Report ID:

99052110

Laboratory Name:

JMTC IH Analytical Laboratory

Laboratory Code:

JMANS

Subcontract Number:

800221/800188SX6

RIN: Requestor: 99Z7574 Karen Olson

P.O./Charge Code:

NG836900

Dear Mr. Cichorz:

The Johns Manville Technical Center (IMTC) has performed the following analytical services as requested. The results are calculated based upon the information supplied on the submission form. All laboratory data has been filed and are available upon request. The JMTC IH Analytical Laboratory is accredited by the American Industrial Hygiene Association (AIHA) in the industrial hygiene program (Certificate No. 056) and participates in the AIHA ELPAT program.

If you have any questions, please call (303) 978-2584.

Scope of Work:

Requested	Bottle	Customer	Laboratory	Line Item	Sample
Analysis	Number(s)	Number(s)	ID Number	Code	Matrix
Beryllium	9927574-001.001	904-05181999-35-001	99052110-001	NR01A001	WIPE
Beryllium	9927574-002.001	904-05181999-35-002	99052110-002	NR01A001	WIPE
Beryllium	99Z7574-003.001	904-05181999-35-003	99052110-003	NR01A001	WIPE
Beryllium	9927574-004.001	904-05181999-35-004	99052110-004	NRO1A001	WIPE
Beryllium	99Z7574-005.001	904-05181999-35-005	99052110-005	NR01A001	WIPE
Beryllium	9927574-006.001	904-05181999-35-006	99052110-006	NR01A001	WIPE
Beryllium	9927574-007.001	904-05181999-35-007	99052110-007	NR01A001	WIPE
Beryllium	9927574-008.001	904-05181999-35-008	99052110-008	NROIA001	WIPE
Beryllium	99Z7574-009.001	904-05181999-35-009	99052110-009	NR01A001	WIPE
Beryllium	9927574-010.001	904-05181999-35-010	99052110-010	NR01A001	WIPE
Beryllium	9927574-011.001	904-05181999-35-011	99052110-011	NR01A001	WIPE
Beryllium	9927574-012.001	904-05181999-35-012	99052110-012	NR01A001	WIPE
Beryllium	9927574-013.001	904-05181999-35-013	99052110-013	NR01A001	WIPE
Beryllium	9927574-014.001	904-05181999-35-014	99052110-014	NR01A001	Wipe
Beryllium	9927574-015.001	904-05181999-35-015	99052110-015	NR01A001	WIPE
Beryllium	9927574-016.001	994-95181999-35-016	99052110-016	NR01A001	WIPE
Beryllium	9927574-017.001	904-05181999-35-017	99052110-017	NR01A001	WIPE
Beryllium	9927574-018.001	904-05181999-35-018	99052110-018	NRO1A001	WIPE
Beryllium	9927574-019.001	904-05181999-35-019	99052110-019	NR01A001	WIPE
Beryllium	9927574-020.001	904-05181999-35-020	99052110-020	NR01A001	Wipe
Beryllium	9927574-021.001	904-05181999-35-021	99052110-021	NR01A001	WIPE
Boryllium	9927574-022.001	904-05181999-35-022	99052110-022	IH01C015	AIR
Beryllium	99Z7574-023.001	904-05181999-35-023	99052110-023	TH01C015	AIR



MAY 26 '99 14:33 FR MTC IH LAB

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P.03

May 26, 1999

Laboratory Report ID:

99052110

Laboratory Name:

JMTC IH Analytical Laboratory

Laboratory Code:

JMANS

Subcontract Numbers

800221/800188SX6

RIN:

99Z7574

Requestor:

Karen Olson

P.O./Charge Code:

NG836900

Comments: No problems were encountered with sample receiving and sample analyses.

I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy sample package and the computer-readable EDD, as applicable, submitted on diskette or by modern, has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Scott A. Steiner

Industrial Hygicae Project Manager

Date

Appendix F.3.1.3

Pad 904 Tent 11 Historical Chemical Data

Beryllium

Laboratory Data

MAY 26 '99 14:34 FR MTC IH LAB

303 978 3005 TO 93039664555

P.04

May 26, 1999

Laboratory Report ID: 99052110

Laboratory Name:

JMTC IH Analytical Laboratory

Laboratory Code:

JMANS

Subcontract Number:

800221/800188SX6

RIN: Requestor: 99Z7574

P.O./Charge Code:

Karen Olson NG836900

QUICK RESULTS SUMMARY

Reporting Limit: 0.1 µg NR01A001 Line Item Code: 05/24/99 WIPE Date Received: Sample Matrix: 05/25/99 OSHA ID-125G Date Analyzed: Analytical Method:

Customer	Laboratory	Requested	C	ONCENTRAT	TION			Constituent
Number	ID Number	Analysis	Backup	Main	Total_	T	Q	ID _
904-05181999-35-001	99052110-001	Beryllium			< 0.1 µg	TRI	1	7440-41-7
904-05181999-35-002	99052110-002	Beryllium			< 0,1 µg	TRI	J	7440-41-7
904-05181999-35-003	99052110-003	Beryllium			< 0.1 µg	TRI	J	7440-41-7
904-05181999-35-004	99052110-004	Beryllium			0.4 μg	TRI		7440-41-7
904-05181999-35-005	99052110-005	Beryllium			< 0.1 µg	TRI	y	7440-41-7
904-05181999-35-006	99052110-006	Beryllium			0.3 μg	TRI	I^-	7440-41-7
	99052110-007	Beryllium			0.2 μg	TRI		7440-41-7
904-05181999-35-007	99052110-008	Beryllium			0,1 μg	TRI		7440-41-7
	99052110-009	Beryllium		· · · · · · · · · · · · · · · · · · ·	0.2 με	TRI		7440-41-7
904-05121999-35-009	99052110-009	Beryllium			< 0.1 µg	TRI	1	7440-41-7
904-05181999-35-010			~~ 	 	< 0.1 µg	TRI	7	7440-41-7
904-05181999-35-011	99052110-011	Beryllium		ļ	< 0.1 μg	TRI	1	7440-41-7
904-05181999-35-012	99052110-012	Beryllium	_ 		< 0.1 μg	TRI	广	7440-41-7
904-05181999-35-013	99052110-013	Beryllium		 		TRI	+	7440-41-7
904-05181999-15-014	99052110-014	Beryllium		<u> </u>		TRI		7440-41-7
904-05181999-35-015	99052110-015	Beryllium			0.2 μg	TRI	-	7440-41-7
904-05181999-35-016	99052110-016	Beryllium		 	< 0.1 µg	TRI		7440-41-7
904-05181999-35-017	99052110-017	Deryllium		ļ	< 0.1 μg		+	7440-41-7
904-05181999-35-018	99052110-018	Beryllium		ļ	< 0.1 μg	TRI	4	
904-05181999-35-019	99052110-019	Beryllium			< 0.1 μg	TRI	_	7440-41-7
904-05181999-35-020	99052110-020	Beryllium		<u> </u>	< 0.1 μg	TRI		7440-41-7
904-05181999-35-021	99052110-021	Beryllium	1	1	< 0.1 µg	TRI	1	7440-41-7



MAY 26 '99 14:34 FR MTC IH LAB

303 978 3005 TO 93039664555

P.05

May 26, 1999

Laboratory Report ID: 99052110

Laboratory Names

JMTC IH Analytical Laboratory

Laboratory Code: JMANS

Subcontract Number: 800221/8001885X6

RIN:

9927574

Requestor:

Kuren Olson

P.O./Charge Code:

NG836900

QUICK RESULTS SUMMARY

Line Item Code:	JH01C015	Reporting Limit:	0.01 µg
Sample Matrix:	AIR	Date Received:	05/24/99
Analytical Method:	NIOSH 7300	Date Analyzed:	05/25/99

Customer	Laboratory	Requested	Ç	ONCENTRAT	TON			Constituent
Number	ID Number	Analysis	Backup	Main	Total	T	Q	[D_
904-05181999-35-022	99052110-022	Beryllium			< 0.01 µg	TR1	U	7440-41-7
904-05181999-35-023	99052110-023	Beryllium			< 0.01 µg	TRI	J	7440-41-7



Term 11

Be SURFACE SMEAR RESULTS (as summarized from K-H Sitewide Be Program)

	<u> </u>	_	-			<u> </u>			}											<u> </u>												
µg/100cm²	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0 1
CONCENTRATION ON FILTER (µg)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
L = LESS THAN DETECTABLE LIMIT	7	7	7	7	٦	-1	7	Ļ	7	7	7	7	7	7	7	٦	7	٦	7		7	7	7	7	7	7	7	7	7	7	7	
LOCATION/DESCRIPTION	Asphalt pad	Asphalt pad	Absorbent Bag	Asphalt pad	Asphalt pad	Asphalt pad	Absorbent Bag	Asphalt pad	Asphalt pad	Piece of old tent	Asphalt pad	Crate	Piece of old tent	Asphalt pad	Asphalt pad	Asphalt pad	Asphalt pad	Piece of old tent	Asphalt pad	Crate	Asphalt pad	Crate	Crate	Asphalt pad	Asphalt pad	Asphalt pad	Crate	Crate	Crate	Asphalt pad	Asphalt pad	Asphalt pad
SAMPLE COORDINATE NUMBER	-	2	3	4	5	9	2	8	6	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
RM	Tent 11	Tont 11																														
BLDG	904	904	904	904	904	904	904	904	904	904	904	904	904	904	904	904	904	904	904	904	904	904	904	904	904	904	904	904	904	904	904	700
SAMPLE NUMBER	904-03081999-35-096	904-03081999-35-097	904-03081999-35-098	904-03081999-35-099	904-03081999-35-100	904-03081999-35-101	904-03081999-35-102	904-03081999-35-103	904-03081999-35-104	904-03081999-35-105	904-03081999-35-106	904-03081999-35-107	904-03081999-35-108	904-03081999-35-109	904-03081999-35-110	904-03081999-35-111	904-03081999-35-112	904-03081999-35-113	904-03081999-35-114	904-03081999-35-115	904-03081999-35-116	904-03081999-35-117	904-03081999-35-118	904-03081999-35-119	904-03081999-35-120	904-03081999-35-121	904-03081999-35-122	904-03081999-35-123	904-03081999-35-124	904-03081999-35-125	904-03081999-35-126	004 03084000 35 127



TAT 11

Be SURFACE SMEAR RESULTS (as summarized from K-H Sitewide Be Program)

			SAMPLE		L = LESS THAN DETECTABLE	CONCENTRATION ON	
SAMPLE NUMBER	BLDG	RM	NUMBER	LOCATION/DESCRIPTION	LIMIT	FILTER (µg)	$\mu g/100 cm^2$
904-03081999-35-128	904	Tent 11	33	Piece of old tent	7	0.1	0.1
904-03081999-35-129	904	Tent 11	34	Asphalt pad	7	0.1	0.1
904-03081999-35-130	904	Tent 11	35	Asphalt pad	7	0.1	0.1
904-03081999-35-131	904	Tent 11	36	Crate	7	0.1	0.1
904-03081999-35-132	904	Tent 11	37	Asphalt pad	, , , , , , , , , , , , , , , , , , ,	0.1	0.1
904-03081999-35-133	904	Tent 11	38	Asphalt pad	7	0.1	0.1
904-03081999-35-134	904	Tent 11	39	Crate	7	0.1	0.1
904-03081999-35-135	904	Tent 11	40	Asphalt pad	Ĺ	0.1	0.1
904-03081999-35-136	904	Tent 11	41	Piece of old tent	7	0.1	0.1
904-03081999-35-137	904	Tent 11	42	Asphalt pad	7	0.1	0.1
904-03081999-35-138	904	Tent 11	43	Asphalt pad	Γ	0.1	0.1
904-03081999-35-139	904	Tent 11	44	Asphalt pad	Ţ	0.1	0.1
904-03081999-35-140	904	Tent 11	45	Asphalt pad		0.1	0.1
904-03081999-35-141	904	Tent 11	46	Asphalt pad	T	0.1	0.1
904-03081999-35-142	904	Tent 11	47	Asphalt pad	L	0.1	0.1
904-03081999-35-143	904	Tent 11	48	Asphalt pad	L	0.1	0.1
904-03081999-35-144	904	Tent 11	49	Asphalt pad	L	0.1	0.1
904-03081999-35-145	904	Tent 11	20	Asphalt pad	J	0.1	0.1



								#	
T					SAMPLE			CONCENTR	
. را مدمو				SAMPLE TIME	VOLUME		TOTAL ON	ATION	8 HOUR
BUILDING	SAMPLE NUMBER	PRE FLOW	POST FLOW	MINUTES	LITERS	T = <	FILTER (µg)	(µg/m³)	TWA (µg/m³)
904 pad)	904-03081999-35-161	2.63	2.67	107	284		0.01	0.04	0.008
	904-03081999-35-162					7	0.01	BLANK	
904 pad)	904-03081999-35-163	2.61	2.58	163	424	Ţ	0.01	0.02	0.008
Ó	904-03081999-35-164					7	0.01	BLANK	
904 pad	904-04061999-35-076	2.68	2.71	113	305	7	0.01	0.03	0.007
	904-04061999-35-077					7	0.01	BLANK	
904 pad	904-05181999-35-022	2.57	2.52	33	84	٦	0.01	0.1	0.008
3	904-05181999-35-023					J	0.01	BLANK	

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Appendix G Asbestos Reports

Appendix G.1

Historical Asbestos Characterization Reports

Appendix G.1.1

Historical Asbestos Characterization Reports

Bldg. 551

ASBESTOS/PCB'S/METALS IN PAINT CHARACTERIZATION REPORT FOR BUILDING 551



RF/RMRS-98-272.UN TOC, Rev. 0, Page 7 of 14 Date Effective: 09/15/98



Asbestos, Polychlorinated Biphenyls and Paint Characterization Report

Building 551

Rocky Flats Environmental Technology Site

Prepared by:

Scientific Ecology Group for

Rocky Mountain Remediation Services

Revision 0 September 3, 1998



ASBESTOS/PCB'S/METALS IN PAINT CHARACTERIZATION REPORT FOR BUILDING 551

RF/RMRS-98-272.UN TOC, Rev. 0, Page 8 of 14 Date Effective: 09/15/98

Acronyms

AHERA Asbestos Hazard Emergency Response Act

APO Analytical Projects Office

Be Beryllium

CDPHE Colorado Department of Public Health and Environment

cm² Square Centimeters

DCGL Derived Concentration Guideline Level

DOE U.S. Department of Energy dpm Disintegrations per minute DQO Data Quality Objective

EPA U. S. Environmental Protection Agency

ICP Inductively Coupled Plasma

MARSSIM Multi-Agency Radiation Site Survey and Site Investigation Manual

MDA Minimum Detectable Amount PCB Polychlorinated biphenyl QA/QCQuality Assurance/Quality Control

RCRA Resource Conservation and Recovery Act
RFETS Rocky Flats Environmental Technology Site
RLC Reconnaissance Level Characterization

RLCR Reconnaissance Level Characterization Report TCLP Toxicity Characteristic Leaching Procedure



RF/RMRS-98-272.UN TOC, Rev. 0, Page 9 of 14 Date Effective: 09/15/98

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	3.1 Inspection Procedures
	3.2 Description and Location of Metals in Paint
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Date Effective: 09/15/98

1.0 INTRODUCTION

During the weeks of July 27 through August 7, 1998, Building 551 and 556 were inspected and sampled for asbestos in building materials, isotopics and metals in paint by Scientific Ecology Group, Colorado (SEG) staff with the assistance of the ASI sampling team. This information is included in this report. The purpose of this inspection was to prepare for and facilitate the renovation of the facilities for the purposes of waste storage.

The primary driver for this inspection was to discover asbestos in building materials and PCB's/lead/metals in paint for resolution of Industrial Hygiene/Health and Safety and waste characterization issues. As such, analysis of the paint chips included methodologies necessary to provide data for worker exposure (ICP) risk as well as waste disposal (TCLP). Other pertinent information included several paint chip samples analyzed for isotopics.

The asbestos in building materials inspection was conducted in substantial compliance with the Environmental Protection Agency (EPA) Asbestos Hazard Emergency Response Act (AHERA) regulations published as 40CFR763 in the Federal Register in 1987.

The lead in paint inspection was conducted in accordance with the guidelines established by the US Department of Housing and Urban Development (HUD) published in the Guidelines for the Evaluation and Control of Lead Based Paint Hazards in Housing pursuant the Title X of the Housing and Community Development Act of 1992.

The enclosed report contains the location and descriptions of suspected asbestos containing building materials and metals containing paint samples on building surfaces, along with results of isotopics analysis for nine locations and PCB's analysis for one location. Materials were analyzed and results in tabular form are contained in Appendix B. Each sampled building material is described as either asbestos or non-asbestos containing. Each sampled painted surface is described as either metals or non-metals containing paint, or PCB/non-PCB containing paint. Isotopics samples acquired will assist in radiological determinations for the project.

2.0 ASBESTOS IN BUILDING MATERIALS SURVEY

2.1 Inspection Procedures

In December of 1996, Sitex performed an AHERA style building inspection in Building 551. Building 556 was not included in this inspection. SEG staff evaluated this report



ASBESTOS/PCB'S/METALS IN PAINT CHARACTERIZATION REPORT 14 RF/RMRS-98-272.UN TOC, Rev. 0, Page 11 of

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that included samples of pipe insulation, drywall systems, cementitious board and floor tile. The evaluation revealed an insufficient number of drywall samples and the omission of Building 556.

Bulk samples were acquired to determine the presence of asbestos in suspect building materials. Suspect materials were chosen based on historical significance or on the judgement of the accredited inspector. Each sample was assigned an individual number made up of the building number, the date the sample was acquired, the initials of the sampling technician, and a three digit number in sequence. Quality Control samples are designated in the Bulk Sample Data Table as (QC).

A total of five (5) additional samples were acquired from suspected materials. These materials included drywall systems, ceiling tile and window putty. All samples were acquired in a random manner representative of the suspected material.

All bulk samples were analyzed by Reservoirs Environmental Services, Inc. (RESI) of Denver, Colorado. RESI is accredited through the National Institute of Standards and Technology (NIST) and participates in the NIST National Voluntary Laboratory Accreditation Program (NVLAP) as required by the EPA. Bulk samples were analyzed by Polarized Light Microscopy (PLM) in compliance with guidelines established by the EPA 40 CFR 763, Subpart F, Appendix A. Asbestos concentrations were visually estimated and reported in percent by layer of each sample.

Colorado Regulation #8 provides regulatory guidance for asbestos control. As such, this regulation requires Point Count Analysis for certain conditions and types of materials. Should a friable material analysis by PLM determine a detectable but less than 1% asbestos content, then that material must have Point Count Analysis. The bulk Sample Data Table will indicate such analysis with results in (parentheses).

2.2 Description and Hazard Assessment of ACM

This section contains only those materials with potential impact on or by the project. Changes in scope of work would necessitate re-evaluation of the facility.

2.2.1 Thermal Systems Insulation

Although other pipes are insulated with asbestos containing insulation in Building 551, the only pipe insulation with an immediate impact on the project is approximately 200 linear feet of pipes and insulation associated with the HVAC system in the north end of the facility. This insulation is located on the west end of the metal structure, starting in the south-west corner and extending approximately fifty feet north to a ductwork system. At the time of inspection, several dents were observed in the insulation, but it appeared intact.

The EPA/AHERA hazard assessment category for this insulation in "Thermal Systems Insulation in good condition, with potential for damage." The appropriate response



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2.2.2 Cementitious Board: Building 551

guarded so as to prevent contact during drum movement.

Approximately 3,500 square feet of cementitious, or "Transite" board, located in 22 window openings in the south half of Building 551. At the time of inspection, the panels were in generally good condition.

The EPA/AHERA hazard assessment category for the cementitious board is "Miscellaneous material in good condition." The appropriate response action for the board is to maintain in good condition and to periodically survey the material for changes in condition.

2.2.3 Cementitious Board: Building 556

This material was not sampled and is assumed to be asbestos containing. Approximately 1300 square feet of cementitious or "Transite" board, located on the interior walls of Building 556. At the time of inspection, the panels were in generally good condition.

The EPA/AHERA hazard assessment category for the cementitious board is "Miscellaneous material in good condition." The appropriate response action for the board is to maintain in good condition and to periodically survey the material for changes in condition. Should the structure be demolished, these panels must be removed prior to demolition.

2.2.4 Built-up Roofing

This material was not sampled and is assumed to be asbestos containing. Approximately 24,000 square feet of built-up tar, felt and gravel roofing. This roofing is located on the south end of the structure. At the time of inspection, the roof was reported to be leaking in a few locations, but appeared to be in good condition..

The EPA/AHERA hazard assessment category for the roofing is "Miscellaneous material in good condition." The appropriate response action for the roofing is to maintain in good condition and periodically survey for changes in condition.

3.0 METALS IN PAINT SURVEY

3.1 Inspection Procedures

Bulk paint samples were acquired from building surfaces to determine the presence of lead and other metals, including mercury. Suspect paints were chosen based on historical significance or on the judgement of the accredited inspector.



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A total of fourteen (14) sample locations were chosen and fifty (50) samples were acquired from suspected painted surfaces. These surfaces included the interior and exterior paints. Samples were chosen for their distinct color variations. All samples were acquired in a random manner representative of the individual color.

Based on historical data from other site structures, the bright red paint associated with fire and safety markings was assumed to be metals containing.

In order to facilitate the transfer of samples to off-site laboratories, radiological screening was performed on the fourteen (14) sample locations. Paragon Laboratories in Fort Collins, Colorado analyzed nine (9) sample locations for isotopics.

All paint sample locations were analyzed by the Southwest Laboratories of Oklahoma (SWLO). This lab is properly accredited for bulk paint analysis through the American Industrial Hygiene Association. Bulk paint samples were analyzed with Inductively Coupled Plasma (EPA Method SW 846-3050/7420 Total Metals) and Toxicity Characteristic Leaching Procedure (EPA SW 846 Method 1311). ICP results for the purposes of determining occupational exposure are reported in parts per million, although there may be no direct correlation between content in paint and potential exposure. TCLP results for the determination of waste streams are reported in milligrams per liter. Two (2) paint sample locations were analyzed for PCB's by SWLO.

3.2 Locations and Descriptions of Metals in Paint

Contained herein is a summary of the results of bulk samples for lead/metals in the paint on surfaces in Buildings 551 and 556. Appendix B contains a Paint Chip Bulk Sample Data Table that summarizes the laboratory findings. Appendix B also includes copies of the laboratory data that details the analytical findings. TCLP analytical results are a valuable aid in waste stream determination, while ICP analytical results are a valuable aid to assessing worker health and safety.

3.2.1 Building 551

Building 551 had, at the time of inspection, dark blue, light blue, light grey, light tan, grey-green, battleship grey, textured beige and tan as predominate paint colors on interior and exterior surfaces. Following is general information regarding results of the sampling and analysis. Detailed information can be found in Appendix B

3.2.1.1 Dark Blue Paint on Concrete Wall

ICP analysis was not performed on this sample.

TCLP analysis on the dark blue paint, located on the south interior wall near the south main entry indicates metals levels below the Land Disposal Requirements.



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PCB analysis was requested, but was not available for this report.

3.2.1.2 Light Grey on Concrete Walls

The light grey paint on the concrete walls in the southwest corner office area contained detectable levels of arsenic, barium, cadmium, chromium, lead, mercury, selenium, silver and other non RCRA metals.

TCLP analysis indicates levels above the Land Disposal Requirements for mercury and zinc.

3.2.1.3 Light Tan on Concrete Walls

The light tan paint on the concrete walls in the southwest office area contained detectable levels of arsenic, barium, cadmium, chromium, lead, mercury, selenium, silver and other non RCRA metals.

TCLP analysis indicates levels above the Land Disposal Requirements for mercury.

3.2.1.4 Battleship Grey on Floor, South Half

The battleship grey paint on the floor of the south half of the building contained detectable levels of arsenic, barium, cadmium, chromium, lead, mercury, selenium, silver and other non RCRA metals.

TCLP analysis indicates levels above the Land Disposal Requirements for lead.

3.2.1.5 Grey-green on Columns and Walls

The grey-green paint on the concrete walls, columns and window panels in the interior of the south warehouse area contained detectable levels of arsenic, barium, cadmium, chromium, lead, mercury, selenium, silver and other non RCRA metals.

TCLP analysis indicates levels above the Land Disposal Requirements for mercury.

3.2.1.6 Battleship Grey on Floor, North Half

The battleship grey paint on the floor of the north half of the warehouse area contained detectable levels of arsenic, barium, cadmium, chromium, lead, mercury, selenium, silver and other non RCRA metals.

TCLP analysis indicates levels above the Land Disposal Requirements for lead and zinc.

3.2.1.7 White on Drywall



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The white paint on the drywall in the office area in the east addition (room 109A) contained detectable levels of arsenic, barium, cadmium, chromium, lead, mercury, selenium, silver and other non RCRA metals.

TCLP analysis indicates metals levels below the Land Disposal Requirements.

3.2.1.8 Light Blue on Concrete

The light blue paint on the outside walls of the restroom/office areas contained detectable levels of arsenic, barium, cadmium, chromium, lead, mercury, selenium, silver and other non RCRA metals.

TCLP analysis indicates all metals levels below the Land Disposal Requirements.

3.2.1.9 Tan-brown on Exterior

The textured tan-brown exterior coating on the south half of the building contained detectable levels of arsenic, barium, cadmium, chromium, lead, mercury, selenium, silver and other non RCRA metals.

TCLP analysis indicates metals levels below Land Disposal Requirements.

3.2.1.10 Tan-yellow on Exterior Sheet Metal

The tan-yellow painted corrugated sheet metal exterior of the north half of the building contained detectable levels of arsenic, barium, cadmium, chromium, lead, mercury, selenium, silver and other non RCRA metals.

TCLP analysis indicates levels above the Land Disposal Requirements for zinc.

3.2.2 Building 556

Building 556 had, at the time of inspection, light grey as the predominate paint color on interior surfaces. Exterior surface colors included tan and brown. Following is general information on the sampling and subsequent analysis. Details can be discovered in Appendix B.

3.2.2.1 Light Grey on Interior Sheet Metal and Columns

The light grey paint on the interior sheet metal and columns contained detectable levels of arsenic, barium, cadmium, chromium, lead, mercury, selenium, silver and other non RCRA metals.

TCLP analysis indicates levels above the Land Disposal Requirements for zinc.

3.2.2.2 Tan on Exterior Sheet Metal



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The tan painted sheet metal on the exterior of the building contained detectable levels of arsenic, barium, cadmium, chromium, lead, mercury, selenium, silver and other non RCRA metals.

TCLP analysis indicates levels above the Land Disposal Requirements for zinc.

3.2.2.3 Brown on Exterior Sheet Metal Trim

The brown paint on the exterior sheet metal trim contained detectable levels of arsenic, barium, cadmium, chromium, lead, mercury, selenium, silver and other non RCRA metals.

TCLP analysis indicates levels above the Land Disposal Requirements for chromium, lead, mercury and zinc.

4.0 LEAD/METALS IN PAINT REGULATORY REVIEW AND RECOMMENDATIONS

4.1 Lead in Paint Regulatory Review

In June, 1995, the US Department of Housing and Urban Development (HUD) published the Guidelines for the Evaluation and Control of Lead Based Paint Hazards in Housing pursuant to Title X of the Housing and Community Development Act of 1992. The document replaced the 1990 publication Lead Based Paint: Interim Guidelines for Hazard Identification and Abatement in Public and Indian Housing. The new publication addresses lead hazards posed by paint, dust and soil in the residential environment. It provides specific guidelines for XRF and bulk paint sampling in housing including sampling locations, sample collection procedures and laboratory analysis procedures. In addition, it provides guidelines for hazard assessment of lead based paint, abatement of lead based paint, and clearance sampling. The guidelines define lead based paint as paint that contains 1.0 milligrams or more of lead per square centimeter of surface area. Although the guidelines act as a good reference for lead paint inspections, they do not apply to non-HUD homes and are not enforceable by law unless a Federal, State or RFETS directive requires adherence to all or parts of the publication.

OSHA's CFR 1926.62 applies to the disturbance or demolition of structures that contain detectable levels of lead in paint. Detection limits of 10 parts per million are commonly the lowest limit normally achievable by standard laboratory analysis. At or below this limit OSHA believes exposure poses limited risk to workers.

However, if the employer suspects that lead may be present, the employee protection and safety precautions as outlined in CFR 1926.62 apply, especially employee medical surveillance and monitoring.



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suspected of containing metals.

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4.2 Metals In Paint Regulatory Review: Recycling and Disposal

Disposal of materials coated with paints must pass Toxicity Characteristic Leaching Procedure (TCLP) to meet the Land Disposal Requirements. Should analysis indicate metals or other contaminants listed as EPA Hazardous Waste above or at Regulatory (EPA 40 CFR 262.11) Levels, RCRA regulatory drivers must be met for disposal.

Metals coated with paints, such as sheet metal, tanks and pipes, may be recycled without major regulatory requirements. Due diligence may require notification to the receiver of the content of the paints.

5.0 PCB's IN PAINT

Several painted surfaces in the facility are impacted by this project. However, based on sampling in other facilities on site and historical/process knowledge, all but one paint remained suspect. The dark blue paint on the south wall at the main south entry was suspect due to its glossy finish and thickness of application.

At the time of this report, no analytical data was available for this paint. Conservative logic dictates that this paint be PCB's containing until such time as the analytical results are available. As such, any work that may disturb this paint, or disposal of materials coated with this paint, must be in accordance with applicable regulatory guidelines.

6.0 ISOTOPICS IN PAINT

As part of the initial investigation, nine locations for isotopics in paint were selected. These locations were biased by traffic patterns in the building and historical information on the facility and plant site. This baseline information may be included in more comprehensive studies in the future. Please refer to Appendix B for details on analytical results.

7.0 DISCUSSION ON DATA QUALITY OBJECTIVES

In an effort to meet certain Data Quality Objectives, careful study of the Building 551 Asbestos Polychlorinated Biphenyls and Paint Sampling and Analysis Plan (RMRS, August, 1998) was necessary. During the subsequent sampling effort, certain corrections were necessary. In addition, laboratory data was cross-matched to field data. Discussion of the findings and corrections follows.

7.1 Corrections to Sampling Protocol



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In the Sampling and Analysis Plan (RMRS, 1998), Table 2-1 described sampling requirements. During the sampling effort, it was discovered that two additional samples were necessary to adequately characterize the facility. Please refer to Appendix A, Table 6-1. Additions are shown in **[bold type in brackets]**. Deletions are *in italics*.

In the Sampling and Analysis Plan (RMRS, 1998), Table 2-1 failed to account for the exterior paints on both Buildings 551 and 556. A TCLP/ICP sample location for the oldest section of Building 551 was added to the sampling events, along with a sample of the exterior painted sheet metal of Building 556.

In the Sampling and Analysis Plan (RMRS, 1998), Table 2-1 located a TCLP/ICP sample of off-white paint on the columns in the interior of Building 551. Upon closer inspection and with the consensus of the sampling team, it was determined that the columns were painted the same color as the interior walls. The column sample was omitted from the sampling events.

In the Sampling and Analysis Plan (RMRS, 1998), Table 2-1 called for 43 samples of materials suspected of containing asbestos. A building inspection by Sitex in 1996 indicated that several materials listed in Table 2-1 had been sampled. Upon review of the Sitex report, the accredited Asbestos Inspector determined that only two samples of drywall, tape and joint compound would be necessary in Building 551. This negated the need for 33 of the samples listed in Table 2-1 in the Sampling and Analysis Plan (RMRS, 1998).

In the Sampling and Analysis Plan (RMRS, 1998), Table 2-1 included samples of pipe insulation in Building 556. Upon closer scrutiny, it was discovered that the insulation was fiberglass with no vapor barrier mastic. These observations eliminated the insulation as a suspect material and the samples were not acquired.

In the Sampling and Analysis Plan (RMRS, 1998), Table 2-1 included a sample of the cementitious wallboard on the interior walls of Building 556. Due to the physical nature of the material, and it's prevalence on site, this material is assumed to be asbestos containing, and no sample was acquired.

In the Sampling and Analysis Plan (RMRS, 1998), Table 2-1 included an asbestos sample of the cementitious wallboard on the window wells of Building 556. Due to the physical nature of the material, and it's prevalence on site, this material is assumed to be asbestos containing, and no sample was acquired.

In the Sampling and Analysis Plan (RMRS, 1998), Table 2-1 included requirements for asbestos samples of roofing materials on Building 551. After review of the building drawings that indicate no major repairs to the roof, the tar and roofing felt can be assumed to contain asbestos. Thus no samples were acquired.



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Date Effective: 09/15/98 In the Sampling and Analysis Plan (RMRS, 1998), Table 2-1 included requirements for asbestos samples of welding components. During the inspection, no suspect materials were discovered associated with the welders. No samples were acquired of any welding components.

In the Sampling and Analysis Plan (RMRS, 1998), Table 2-1 included requirements for asbestos samples of the exterior wall texture on the south end of Building 551. The previously mentioned Sitex report indicated that samples were acquired. This negated the need for additional sampling.

In the Sampling and Analysis Plan (RMRS, 1998), Table 2-1 did not account for the window putty in either Building 551 or 556. During the inspection, an asbestos sample of the window putty was acquired in Building 556.

In the Sampling and Analysis Plan (RMRS, 1998), Table 2-1 included requirements for PCB samples of liquids in the transformers near Building 556. Based on historical information, these samples were omitted.

In the Sampling and Analysis Plan (RMRS, 1998), Table 2-1 did columnar totals showed 11 ICP and TCLP samples with 1 QA sample (12 TOTAL). The correct totals should be 14 ICP TCLP TOTAL. Total asbestos samples showed 43, while actual sampling totaled 5.

7.2 Data Comparison and Matching

Sample 98A5236-010.001 was a Quality Assurance sample acquired at the same location as 98A5236-009.001. As such, the laboratory data was expected to be comparable. However, the ICP results for zinc indicated a difference of approximately 3,501 mg/kg (ppm) less for sample -010. Discussions with the lab analyst revealed that no unusual occurrences were noted during the analysis effort. The discrepancy could be traced to the application since samples were acquired of both the paint and the sheet metal. TCLP analysis was run on both samples, which yielded nearly double the mg/L concentration of zinc in sample -010 over sample -009. Based on the TCLP results, the discrepancy could be attributable to inconsistencies in the mixture of the applied paint and the sheet metal production process. This material was reported as exceeding the Land Disposal Requirement for zinc.

One paint chip sample was targeted for PCB analysis. Sample 98A5236-001.007 was sent to SWLO for this analysis. Due to a missing instruction on the Chain of Custody, the laboratory failed to analyze the sample within the prescribed hold time. However, since this sample is a solid, hardened paint chip, degradation of the sample that could compromise the quality of the sample is highly unlikely. The laboratory was instructed to perform the analysis.



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TABLE 6-1 SAMPLE SURVEY ACTUALS

Locations	Metals in paint Samples	Asbestos	Isotopics & PCB's
B-551 S end	Grey paint, SW restrooms & offices (1); blue paint, outer wall of SW restrooms & offices (1); tan paint on main area interior walls (1); battleship grey paint on floor (1).	Floor tile/mastic under carpet, SW offices (3); plaster ceiling, restrooms & SW offices (5); cementitious board, exterior window wells (1); exterior wall texture (3). [drywall, tape and joint compound, mezzanine (2)]	Isotopic on grey paint, walls SW offices (1); tan wall paint (1); floor paint (1). PCBs on blue paint (1).
B-551 NW corner, S end		TSI on steam pipes (3).	
B-551 N end	Grey-green paint on interior walls (1); battleship grey paint on floors (1). [tan corrugated exterior sheet metal (1)]	TSI on steam pipes (3); roofing mat'ls (3).	Isotopic on grey-green paint (1); battleship grey (1).
B-551 E extension	Off-white paint on drywall system near door 16-D (1).	Drywall, tape and joint compound, offices near door 16-D ([2] 5), exterior roofing mat'ls (3); exterior wall texture (2).	Isotopic on off- white paint (1).



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B-556 interior	Grey paint, interior walls (1); off-white, interior columns (1).	TSI on pipes (3); ceiling tiles ([1]3); cementitious wallboard (1); welder components (3).	Isotopic on grey paint (1).
B-556 exterior	Tan paint on sheet metal (1); brown paint on doors, gables, gutters & downspouts (1).		Isotopic on tan sheet metal (1).
QA/QC Samples @ 5%	i i	2 [0]	1
TOTALS	12 [14]	43 [5]	13 [10]

ASBESTOS BULK SAMPLE DATA TABLE 2-2

Sample Number	Sample Description and Location	Lab Result
		PLM (PC)
551-980731-MS-	Drywall, tape and joint compound; from room 109,	A: ND
001	NW office, SE corner, 4' from the floor.	B: ND
		C: ND
551-980731-MS-	Drywall, tape and joint compound; from room 109,	A: ND
002	west main office, west wall, 3'S of NW corner, 4'	B: ND
	from the floor.	C: ND
551-980731-MS-	Drywall, tape and joint compound; from room 201,	A: ND
003	S wall, 20' E of W wall, 5' from the floor.	B: ND
		C: ND
551-980731-MS-	Window putty; from B556, S wall, W window, base	A: TR (TR)
004	of left center pane.	, ,
551-980731-MS-	Ceiling tile 2' x 4' with bird track pattern; from B556	A: ND
005	8' W of E wall, 8' N of S wall.	

Note: ND means None Detected, TR means Trace.



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PAINT CHIP BULK SAMPLE DATA TABLE 3-2

Sample Number	Sample Description and Location	Lab Analysis (Result)
98A5236-	Dark blue paint on concrete; from	Rad Screen: (53 pC/g)
001.006	B551, inside main south entry, S wall, W corner, 8' from the floor.	
98A5236-		TCLP: all < LDR
.001.007		
98A5236-	Light grey paint on concrete; from	Rad Screen: (20 pC/g)
002.001	B551 room 106, N wall, 11' E of NW corner, 7' from the floor.	
98A5236-	,	Total Metals: arsenic, barium,
002.002		cadmium, chromium, lead,
		mercury, selenium, silver.
98A5236-		TCLP Metals: mercury, zinc
002.003		
98A5236-		Isotopic: see Appendix B
002.005	en en en en en en en en en en en en en e	Isotopics
98A5236-	Light tan paint on concrete; from B551	Rad Screen: (7 pC/g)
003.001	room 106, W wall, 10' S of NW corner, 3' from the floor.	(17.5)
98A5236-		Total Metals: arsenic, barium,
003.002		cadmium, chromium, lead , mercury, selenium, silver, others
98A5236-		TCLP Metals: mercury
003.003		
98A5236-		Isotopic: see Appendix B
003.004	and the second of the second o	Isotopics
98A5236-	Battleship grey over maroon paint on	Rad Screen: (16 pC/g)
004.001	concrete; from B551 floor, south half, 6' S of column B8	
98A5236-		Total Metals: arsenic, barium,
004.002		cadmium, chromium, lead,
The second		mercury, selenium, silver, others
98A5236-		TCLP Metals: lead
004.003		An array
98A5236-		Isotopic: see Appendix B
004.004		Isotopics
Sample Number	Sample Description and Location	Lab Analysis (Result)
98A5236-	Grey-green paint on concrete; from	Rad Screen: (11 pC/g)
005.001	B551, column B8, south side, 3' from the floor.	7
98A5236-		Total Metals: arsenic, barium,
005.002		cadmium, chromium, lead, mercury, selenium, silver, others



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FOR BUILDING 551 98A5236- 005.003		Date Effective: 09/15/98 TCLP Metals: mercury
98A5236- 005.004		Isotopic: see Appendix B Isotopics
98A5236- 006.001	Battleship grey over maroon paint; from B551 north end, SW corner, near condensate pump.	Rad Screen: (11 pC/g)
98A5236- 006.002	· ·	Total Metals: arsenic, barium, cadmium, chromium, lead, mercury, selenium, silver, others
98A5236- 006.003		TCLP Metals: lead, zinc
98A5236- 006.004	NAME to the control of the control o	Isotopic: see Appendix B Isotopics
98A5236- 007.001	White paint on drywall; from B551 east addition, room 109A, W wall, 3' N of SW corner, 4' from the floor.	Rad Screen: (7 pC/g)
98A5236- 007.002		Total Metals: arsenic, barium, cadmium, chromium, lead, mercury, selenium, silver, others
98A5236- 007.003		TCLP Metals: all < LDR
98A5236- 007.004		Isotopic: see Appendix B Isotopics
98A5236- 008.001	Light grey paint on sheet metal; from B556 interior, S wall, below SW window.	Rad Screen: (9 pC/g)
98A5236- 008.002		Total Metals: arsenic, barium, cadmium, chromium, lead,
Sample Number	Sample Description and Location	mercury, selenium, silver, others Lab Analysis (Result)
98A5236- 008.003		TCLP Metals: zinc
98A5236- 008.004		Isotopic: see Appendix B Isotopics
98A5236- 009.001	Tan paint on sheet metal; from B556 exterior, E wall, 3' N of door 3T, 6' from the ground.	Rad Screen: (0.37 pC/g)
98A5236-	nom the greature	Total Metals: arsenic, barium,
009.002		cadmium, chromium, lead , mercury, selenium, silver, others
98A5236- 009.003		TCLP Metals: all < LDR
98A5236- 009.004		Isotopic: see Appendix B Isotopics



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FOR BUILDING 551 98A5236- 010.001 (QC)	Tan paint on sheet metal; from B556 exterior, E wall, 3' N of door 3T, 6' from the ground.	Date Effective: 09/15/98 Rad Screen: (9 pC/g)
98A5236- 010.002	nom the ground.	Total Metals: arsenic, barium, cadmium, chromium, lead, mercury, selenium, silver, others TCLP Metals: zinc
98A5236- 010.003 98A5236-		Isotopic: see Appendix B
010.004 98A5236- 011.001	Brown paint on metal; from B556 exterior, E wall N side of door 3T, at base.	Isotopics Rad Screen: (22.3 pC/g)
98A5236- 011.002		Total Metals: arsenic, barium, cadmium, chromium, lead, mercury, selenium, silver, others
98A5236- 011.003		TCLP Metals: chromium, lead, mercury, zinc
98A5236- 012.001	Tan-brown paint on concrete; from B551 exterior, E wall, near Door 15D, 3' N of N jamb, 4' from the ground.	Rad Screen: (16.3 pC/g)
Sample Number 98A5236-012.002	Sample Description and Location	Lab Analysis (Result) Total Metals: arsenic, barium, cadmium, chromium, lead, mercury, selenium, silver, others
98A5236- 012.003		TCLP Metals: all < LDR
98A5236- 013.001	Tan-yellow paint on sheet metal; from B551 N exterior, E wall, at door 12D, 3' N of N jamb, 4' from the ground	Rad Screen: (1.10 pC/g)
98A5236- 013.002	o in our james, i moniture greenin	Total Metals: arsenic, barium, cadmium, chromium, lead, mercury, selenium, silver, others
98A5236- 013.003		TCLP Metals: zinc
98A5236- 015.001	Light blue paint on concrete; from E exterior wall between room 104 & 103 entry doors, 3' from the floor.	Rad Screen: (11.0 pC/g)
98A5236- 015.002	2y 300.0, 2	Total Metals: arsenic, barium, cadmium, chromium, lead, mercury, selenium, silver, others
98A5236- 015.003		TCLP Metals: all < LDR



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Statement of Certification

The asbestos in building materials and metals in paint building inspection evaluation performed on **Building 551** was performed in accordance with applicable regulations.

Inspector: Michael N. Schluterbusch



FORM - Asbesto RESERVOIRS ENVIRONMENTAL SERVICES, INC.

WALAP Accredited Laboratory #1896

TABLE I. PLM BULK ANALYSIS, PERCENTAGE COMPOSITION BY VOLUME

Note: The US EPA requires use of stratified analysis for NESHAP and AHERA compliance. Composite results only apply for specific exceptions. Kaiser-Hill Company, LLC 9822563/ft028001, Mike Schutterbusch August 11, 1998 PLM Short Report, Bulk RES 53808-182 24 Hour Cilent Project: Date Samples Received: RES Job Number: Analysis Type: Turnaround: Client:

. 14

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Sample	Lab ID Number	.l ng	Physical	Portion of Total	ASBESTOS CONTES.		Non	Non-Asbestos Fibrous	SCIOS	Fibro	9	-	Man-Fibrous
Number		· >-		Sample	BY LAYER	Œ	U	Components	oneni S	-	٦ ≨ %	a	Components
		a		(%)			ш	٠.	٠ >-	্ ত	<	, p.	
		<u>_</u>			Mineral	Visue		⋖.	z	_	_1	.	
						Estimate (%)	-1	တတ	<u>~</u>	i	<i>:</i>	шь	
551-980731MS-001	EM 359694	A White B Tan/w	White plester w/white paint Tan/white fibrous material Pink fibrous plaster	20 20		SS	0 88	1	.]	İ	00	ို ဝေသ	001
551-980731MS-002	60 (1) (1) (1) (1) (1) (1) (1) (1) (1) (1)		plaster w/white paint			2 2	2 0	_			೦ 🗆	o c	& 5 5
		B Tan filt C White	Tan fibrous material White fibrous plaster	နှင့် သူ		22	96.0	00	00	00	0 C	00	9 6 6
551-980731MS-003	EM 353698	A White B Tan/w	White plaster (mud) Tan/white fibrous material	25 35		22	ဝဗ္ဗ	00		00	Ç C	00	100
			plaster	9		2	ດມີ		00	0	0	Ö	92 4
551-980731MS-004 EM 359897	EM 359697	A Gray p	A Gray plaster w/white paint	8	Chrysotile Point Count	E SE	0 0 0 0 0 0 0 0 0 0 O O O	OO	ot coun	table.	O	0	100 od. < 0.25%
551-980731MS-005	EM 359698	A Gray fib w/white	brous perlitic material e paint	100		2	30 3	30 0	0	0	O	0	
													Ç
ND = None Detected CE TR = Trace, < 1% Visual Estimate	CELL = Cellulose imate	ORG = Organic Trem-Act = Tre	ORG = Organic Trem-Act = Tremolite-Actinolite	WOLL = Wollastonite BRUC = Brucite		GVP = Gypsum SYNTH = Synthetic	sum	Ą	Analyst: PDL	PDL			

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ASBESTOS INSPECTION

AND

OPERATIONS AND MAINTENANCE PLAN

FOR

BUILDING 551

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE GOLDEN, COLORADO

SECTION I

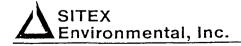
(INTRODUCTION, METHODOLOGY, ASBESTOS INSPECTION)

PREPARED FOR

U.S. DEPARTMENT OF ENERGY ROCKY FLATS FIELD OFFICE, BUILDING B131 P.O. BOX 928 GOLDEN, COLORADO 80402

PROJECT NO. 108230

DECEMBER 31, 1996



11905 Borman Drive St. Louis, MO 63146 (314) 569-1119





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APPENDIX I.



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INTRODUCTION

SITEX Environmental, Inc. (SITEX) was retained by the U.S. Department of Energy, Rocky Flats Field Office in Golden, Colorado to conduct an asbestos inspection and develop an operations and maintenance plan (O&M) for Building 551 located at the Rocky Flats Environmental Technology Site on U.S. Highway 93 in Golden, Colorado. This site is presently an industrial complex which was formerly used to manufacture nuclear weapons.

The asbestos inspection and O&M plan preparation was conducted in accordance with applicable asbestos regulations of the Occupational Safety and Health Administration (OSHA) and U.S. Environmental Protection Agency (EPA). Pertinent OSHA asbestos regulations are contained in Title 29 of the Code of Federal Regulations (CFR), Parts 1910.1001 and 1926.1101. EPA asbestos regulations adhered to were based on the Asbestos School Hazard Abatement Reauthorization Act (ASHARA) which amended the Asbestos Hazard Emergency Response Act (AHERA) or Title II of the Toxic Substance Control Act (TSCA) to extend training and accreditations described in the asbestos Model Accreditation Plan (MAP) to public and commercial buildings. AHERA was originally mandated to address asbestos-containing building materials located in public and private schools grades kindergarten through 12th. Regulations concerning ASHARA, AHERA and MAP are found in Title 40 of the CFR Part 763. OSHA and EPA regulations are presented in Appendices A through E.

The asbestos inspection included the collection of bulk material samples of suspect asbestos-containing materials in the form of surfacing materials, thermal system insulation and miscellaneous materials. The sampled materials are identified by space locations, area descriptions, sample numbers, photographic numbers and bulk material sample results. Asbestos-containing materials are further defined by material classification with a recommended response actions. Bulk sample results and a photographic log contain the percent and type of asbestos found in sampled materials and the photograph number of the photograph depicting the sampled material. Also presented are potential exposure concerns and a drawing indicating the spaces where asbestos-containing materials are located.

The O&M plan contains procedures to allow qualified asbestos personnel to properly address small-scale, short duration asbestos projects and record keeping forms to assist in documenting abatement projects conducted by qualified contractors. The projects would encompass asbestos removal, repair, encapsulation, enclosure or an emergency response or scheduled maintenance procedure.

This document, particularly the O&M plan, requires continual updating and record keeping by a qualified designated person of all activities related to asbestos-containing material and a current evaluation of their present and future exposure potentials. Material condition and potential for damage could change significantly with time. The owner is required to periodically reinspect the asbestos-containing materials or presumed asbestos-containing materials found in this building due to the potential changes in material condition. The qualified designated person should also ensure that all information is in accordance with current asbestos regulations. Regulations found in OSHA, EPA and the State of Colorado publications shall take precedence over this document at all times.





METHODOLOGY

Building 551 was inspected for suspect asbestos-containing materials which included surfacing materials, thermal system insulation and miscellaneous materials. Each material was identified by space number, quantified and then assessed for condition. Bulk material samples were collected of each suspect material utilizing AHERA and OSHA sampling protocols. Homogeneous determinations were made for asbestos-containing thermal system insulation which extended into more than one building space. All other materials (surfacing and miscellaneous) were described for each building space which eliminated the need to identify homogeneous spaces. The advantage of this strategy was to allow the users of this report immediate information regarding the asbestos-containing materials in any given space and not have to rely on a group of functional spaces which would define a homogeneous area.

Bulk material samples of suspect asbestos-containing materials were analyzed by polarized light microscopy (PLM) analysis with dispersion staining (DS) using EPA Method 600 IR-93/116 which is the present analytical method recommended by EPA. Analysis was performed by International Asbestos Testing Laboratory (IATL) located at 16000 Horizon Way, Unit 100 in Mount Laurel, New Jersey. IATL is accredited or approved by the National Institute of Science and Technology-National Voluntary Laboratory Accreditation Program (NIST-NVLAP), American Industrial Hygiene Association (AIHA) and Proficiency Analytical Testing (PAT) program. Laboratory analysis and qualifications for IATL are presented in Appendix F.

The O&M plan was developed using a combination of OSHA regulations and industry standards which are published in a variety of EPA documents. Recommended response actions were determined according to asbestos material condition; whether it was friable and its potential for present and future release of asbestos fibers. The adopted rating system was based on a subjective evaluation which included "low", "moderate" and "high" priority. Low would indicate a priority of concern less than moderate or high. Moderate would indicate a priority of concern higher than low and less than high and so on for high. Some ratings were also presented as a combination of low, moderate and high such as low to moderate or moderate to high.

ASBESTOS INSPECTION

The findings of the asbestos inspection and assessment determinations for Building 551 are documented on the Space Inventory and Recommended Response Action form, the Bulk Sample Results and Photographic Log form and the Present and Future Exposure Potential forms.

Space Inventory and Recommended Response Action Form

The Space Inventory and Recommended Response Action form includes the space number, asbestos material, material classification, approximate quantity, material condition and recommended response action. The space number indicates the area which was inspected for suspect asbestos-containing materials. Asbestos materials refer to the confirmed asbestos-containing materials which were in the inspected space. Material classification describes whether the asbestos material





ASBESTOS INSPECTION (CONT.)

Space Inventory and Recommended Response Action Form (Cont.)

was friable, Category I nonfriable or Category II nonfriable which are defined in Section II of this report. The approximate quantity indicates the amount of the particular asbestos material present in a space. Present condition indicates the present condition of the asbestos material and the type and amount of damage, if any. The recommended response action was based on material classification and present condition. The recommended response action was chosen to minimize fiber exposure to building occupants and the environment.

Bulk Sample Results and Photographic Log Form

The Bulk Sample Results and Photographic Log form is composed of the space number, description of area, sample number, material sampled, photograph number and results. The **space number** is the same as previously mentioned. The **description of area** provides recognizable names which indicate the activity or function of the space. The **sample number** consists of the building number followed by standard counting numbers to indicate a unique sample number. **Material sampled** refers to the actual sampled material in a particular space. The **photograph number** indicates the photographs taken of bulk material samples and details of building spaces. **Results** are the determined laboratory analysis of the collected bulk material samples.

Present and Future Exposure Potential Form

The Present and Future Exposure Potential form consists of headings stating space number, asbestos material, friable, present condition, damage potential and exposure potential. Exposure potential is subdivided into headings of present (no response action); future (response action completed); and future (response action not completed). The **space number**, **asbestos material** and **present condition** were previously defined. **Friable** warrants a yes or no response based on whether the material is friable or nonfriable. **Damage potential** is indicated as low, moderate or high which is based on damage from physical contact, material location and deterioration factors such as air movement, vibration and water damage. The **exposure potential** also indicated as low, moderate or high is based on the asbestos material, whether it is friable, the present condition and the damage potential. Exposure potential is further defined as **present** with no response action being performed and **future** with and without the recommended response action being completed.

Inspection Findings

The completed Space Inventory and Recommended Response Action form, Bulk Sample Results and Photographic Log form and Present and Future Exposure Potential form for Building 551 are as follows. Also presented is a building drawing which indicates space numbers, asbestos materials present and photograph numbers. The photographs which are referred to in the Space Inventory and Recommended Response Action form, the Bulk Sample Results and Photographic Log form and the drawing are presented following the building drawing.





BUILDING 551

Space Inventory and Recommended Response Action

SPACE INVENTORY AND RECOMMENDED RESPONSE ACTION

Building No: 551 Location: Rocky Flats

Date: December 18, 1996

Space No.	Asbestos Material	Material Classification	Approximate Quantity	Material Condition	Recommended Response Action
100	cementitious wall	nonfriable, II	125 sq. ft.	no damage	operations and maintenance
101	pipe insulation, condensate steam	friable	3 ln. ft.	no damage	operations and maintenance
101	pipe insulation, steam 15	friable	650 ln. ft.	no damage	operations and maintenance
101	pipe insulation, steam 125	friable	150 ln. ft.	no damage	operations and maintenance
101	pipe elbows/fittings, steam 125/ condensate steam pumped	friable	100 elbows/fittings	no damage	operations and maintenance
102	pipe insulation, steam	friable	10 ln. ft.	no damage	operations and maintenance
102	pipe insulation, domestic hot water	friable	6 ln. ft.	no damage	operations and maintenance
102	pipe elbows/fittings, domestic cold water	friable	3 elbows/fittings	<1 ln. ft. damage	repair/operations and maintenance
103	pipe insulation, condensate steam	friable	20 ln. ft.	no damage	operations and maintenance
103	pipe elbows/fittings	friable	4 elbows/fittings	no damage	operations and maintenance
104	pipe insulation, steam 15	friable	10 ln. ft.	no damage	operations and maintenance

SPACE INVENTORY AND RECOMMENDED RESPONSE ACTION (CONT.)

Building No: 551 Location: Rocky Flats

Date: December 18, 1996

Space No.	Asbestos Material	Material Classification	Approximate Quantity	Material Condition	Recommended Response Action
104	pipe insulation, condensate steam	friable	20 ln. ft.	no damage	operations and maintenance
104	pipe elbow, domestic cold water	friable	4 elbows	no damage	operations and maintenance
105	pipe insulation, labeled "asbestos"	friable	10 ln. ft.	no damage	operations and maintenance
105	9" x 9" floor tile, beneath carpet	nonfriable, II	150 sq. ft.	no damage	operations and maintenance
105A	cementitious walls	nonfriable, II	100 sq. ft.	no damage	operations and maintenance
105A	9" x 9" floor tile, beneath carpet	nonfriable, I	100 sq. ft.	no damage	operations and maintenance
106	pipe insulation	friable	175 ln. ft.	no damage	operations and maintenance
106	cementitious walls	nonfriable, II	200 sq. ft.	no damage	operations and maintenance
106	9" x 9" floor tile, beneath carpet	nonfriable, I	600 sq. ft.	no damage	operations and maintenance
107	pipe insulation, steam	friable	20 ln. ft.	no damage	operations and maintenance
109	pipe elbows/fitting, steam 15	friable	50 elbows/fittings	no damage	operations and maintenance
109	pipe elbows/fittings, condensate steam pumped	friable	40 elbows/fittings	no damage	operations and maintenance
111	pipe elbows/fittings, steam 15	friable	130 elbows/fittings	no damage	operations and maintenance

SPACE INVENTORY AND RECOMMENDED RESPONSE ACTION (CONT.)

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Building No: 551

Location: Rocky Flats

Date: December 18, 1996

Space No.	Space No. Asbestos Material	Material Classification	Approximate Quantity	Material Condition	Recommended Response Action
111 (Cont.)	pipe elbows/fittings, condensate steam pumped	friable	3 elbows	1 damage	repair/operations and maintenance
201	pipe insulation, steam 15	friable	6 ln. ft.	no damage	operations and maintenance
201	pipe insulation, condensate steam pumped	friable	6 ln. ft.	no damage	operations and maintenance
201 Platform	pipe insulation, steam 125	friable	30 ln. ft.	no damage	operations and maintenance
201 Platform	pipe elbows/fittings, steam 125	friable	5 elbows/fittings	no damage	operations and maintenance

Sylvester B. Douglas Management Planner/Inspector's Name

Signature

Management Planner/Inspector ID



BUILDING 551

Bulk Sample Results and Photographic Log



BULK SAMPLE RESULTS AND PHOTOGRAPHIC LOG

Building No: 551 Location: Rocky Flats

Page No. 1 Date: December 18, 1996

Space No.	Description of Area	Sample No.	Material Samples	Photo No.	Results
101	Warehouse	551-016	pipe insulation, steam 15	16	20% Chrysotile, 20% Amosite
101	Warehouse	551-017	pipe elbow insulation, steam 15	17	2.5% Chrysotile, 4% Amosite
101	Warehouse	551-018	pipe insulation, steam 15 from mezzanine platform		20% Chrysotile, 20% Amosite
101	Warehouse	551-023	pipe elbow insulation, steam 15	21	5% Chrysotile
101	Warehouse	551-024	pipe elbow insulation condensate steam pumped	22	<1% Chrysotile, 4% Amosite
101	Warehouse	551-025	pipe valve insulation condensate steam pumped	22	5% Amosite
101	Warehouse	551-026	pipe elbow insulation steam 125	23	5% Chrysotile, 2% Amosite
101	Warehouse	551-027	pipe elbow insulation condensate steam pumped	24	2.5% Amosite
101	Mechanical Area Mezzanine Platform	551-020	pipe insulation steam 125	18	40% Chrysotile, 5% Amosite
101	Mechanical Area Mezzanine Platform	551-021	pipe elbow insulation, steam 125	19	2% Chrysotile, 2% Amosite

BULK SAMPLE RESULTS AND PHOTOGRAPHIC LOG (CONT.)

Page No. 2 Date: December 18, 1996

Building No. 551 Location: Rocky Flats

Space No.	Description of Area	Sample No.	Material Samples	Photo No.	Results
101	Mechanical Area Mezzanine Platform	551-022	pipe insulation, steam 125	20	15% Chrysotile, 20% Amosite
102	Women's Rest Room	551-008	pipe insulation domestic hot water	6	20% Chrysotile, 20% Amosite
102	Women's Rest Room	551-009	pipefitting insulation domestic cold water	6	20% Chrysotile, 20% Amosite
102	Women's Rest Room	551-013	pipe insulation domestic cold water	13	None Detected
103	Closet/Pipechase	551-007	pipe insulation domestic cold water	∞	None Detected
103	Closet/Pipechase	551-015	pipe insulation domestic cold water	15	None Detected
103	Closet/Pipechase	551-019	pipe elbow insulation domestic hot water	&	20% Chrysotile, 20% Amosite
104	Men's Rest Room	551-010	pipe elbow insulation domestic cold water	10	4% Chrysotile, 3% Amosite
105	Office	551-001	drywall	2	None Detected
105A	Office	551-006	base molding	7	None Detected

BULK SAMPLE RESULTS AND PHOTOGRAPHIC LOG (CONT.)

Page No. 3 Date: December 18, 1996

Building No: 551 Location: Rocky Flats

Space No.	Description of Area	Sample No.	Material Samples	Photo No.	Results
106	Office	551-002	pipe insulation labeled "asbestos"	3	20% Chrysotile, 5% Amosite
106	Office	551-003	cementitious wall	4	60% Chrysotile
106	Office	551-004	$9" \times 9"$ floor tile, brown, beneath carpet	5	15% Chrysotile
106	Office	551-005	pipe elbow insulation, labeled "asbestos"	9	20% Chrysotile, 15% Amosite
109	Storage	551-028	pipe elbow insulation condensate steam pump	25	1.25% Amosite
109	Storage	551-029	pipe elbow/fitting, steam 15	26	3.5% Amosite
109	Storage	551-030	pipe elbow/fitting, steam 15	27	6% Amosite
109C	Office	551-031	base molding, brown	28	None Detected
109C	Office	551-032	drywall	29	None Detected
111	Office	551-033	pipe elbow insulation condensate steam pumped	30	30% Chrysotile
111	Shop Area	551-037	pipe elbow insulation steam 15, main line	34	10% Chrysotile

BULK SAMPLE RESULTS AND PHOTOGRAPHIC LOG (CONT.)

Building No: 551

Page No. 4 Date: December 18, 1996

Location: Rocky Flats

Space No.	Description of Area	Sample No.	Sample No. Material Samples	Photo No.	Results
111	Shop Area	551-038	pipe elbow insulation steam 15, main line, north center	35	10% Chrysotile
111	Shop Area	551-039	pipe elbow insulation steam 15, main line, center area	36	15% Chrysotile
111	Shop Area	551-040	pipe elbow insulation steam 15, main line, center area	37	20% Chrysotile
201	Storage/Meeting	551-011	drywall		None Detected
201	Storage/Meeting	551-012	drywall	12	None Detected
201	Storage/Meeting	551-014	pipe insulation, steam 15	14	20% Chrysotile, 15 Amosite
	Exterior Building	551-034	exterior surface, west side	31	None Detected
	Exterior Building	551-035	exterior surface, east side	32	None Detected
	Exterior Building	551-036	exterior surface, south side	33	None Detected

Asbestos inspection, assessment and sampling have been conducted by an EPA and state of Colorado accredited inspector in accordance with 40 CFR 763, who has completed an approved course under the Asbestos Hazard Emergency Response Act (AHERA).

mspector s Certification No.

Sylvester B. Douglas Name

Signature of Inspector



BUILDING 551

Present and Future Exposure Potential

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PRESENT AND FUTURE EXPOSURE POTENTIAL

Building No. 551

Location: Rocky Flats

Sylvester B. Douglas
Management Planner/Inspector's Name

Signature

Page: 1 Date: December 31, 1996

Management Planner/Inspector ID

					Present	Ing.	Future
Space No.	Asbestos Material	Friable	Present Condition	Damage Potential	No Response Action	Response Action Completed	Response Action Not Completed
100	cementious walls	no	no damage	low	low	low	low
101	pipe insulation	yes	no damage	low	low	low	low to moderate
101	pipe elbows/fittings	yes	no damage	low	low	low	low to moderate
102	pipe insulation	yes	<1 ln. ft.	low	low to moderate	low	moderate
103	pipe insulation	yes	no damage	low	low	low	low to moderate
104	pipe insulation	yes	no damage	low to moderate	low	low	low to moderate
105	pipe insulation	yes	no damage	low	low	low	low to moderate
105	9" x 9" floor tile, beneath carpet	ou	no damage	low	low	low	low

PRESENT AND FUTURE EXPOSURE POTENTIAL (CONT.)

Building No. 551 Location: Rocky Flats

Sylvester B. Douglas
Management Planner/Inspector's Name

Signature

Management Planner/Inspector ID

Page: 2 Date: December 31, 1996

				ond.			Commence of the commence of th
					Present	Fut	Future
Space No. Asb	Asbestos Material	Friable	Present Condition	Damage Potential	No Response Action	Response Action Completed	Response Action Not Completed
105A cem	cementious walls	no	no damage	low	low	low	low
105A 9" x	9" x 9" floor tile	no	no damage	low	low	low	low
106 pipe	pipe insulation	yes	no damage	low to moderate	low	low	moderate
106 cem	cementitious wall	no	no damage	low	low	low	low
106 9" x 9" carpet	9" x 9" floor tile, beneath carpet	no	no damage	low to moderate	low	low	low
107 pipe	pipe insulation	yes	no damage	low	low	low	low to moderate
109 pipe	pipe elbows/fittings	yes	no damage	low	low	low	low to moderate
111 pipe	pipe elbows/fittings	yes	1 damaged elbow/fitting	low	low	low	low to moderate

PRESENT AND FUTURE EXPOSURE POTENTIAL (CONT.)

f in

Building No: 551 Location: Rocky Flan

Sylvester B. Douglas Management Planner/Inspector's Name

Signature

Page: 2 December 31, 1996

Management Planner/Inspector ID

EXPOSURE POTENTIAL

Future

Present

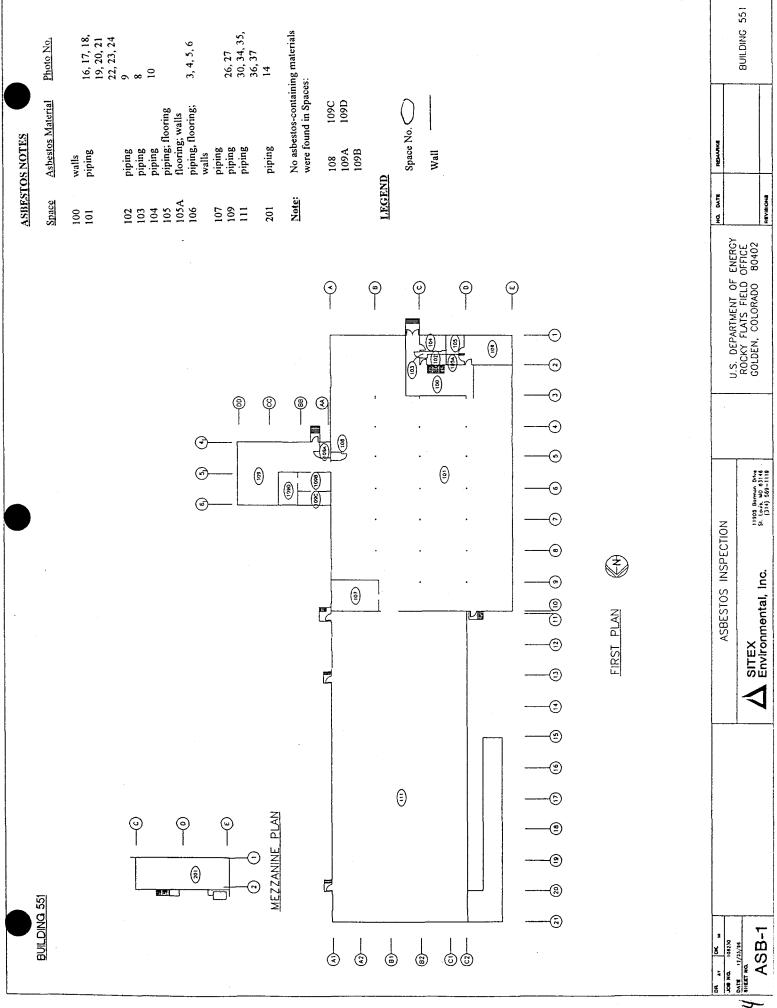
Space No.	Asbestos Material	Friable	Present Friable Condition	Damage Potential	No Response Action	Response Action Completed	Response Action Not Completed
201	pipe insulation	yes	no damage	low	low	low	low to moderate
201 Platform	pipe insulation	yes	no damage	low	low	low	low to moderate
201 Platform	pipe elbows/fittings	yes	no damage	low	low	low	low to moderate

△ SITEX

BUILDING 551

Drawing

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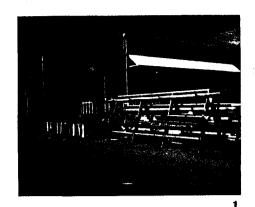
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BUILDING 551

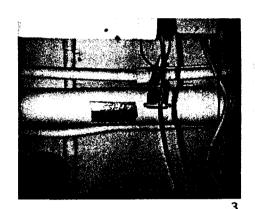
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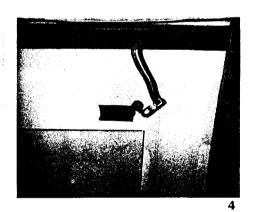






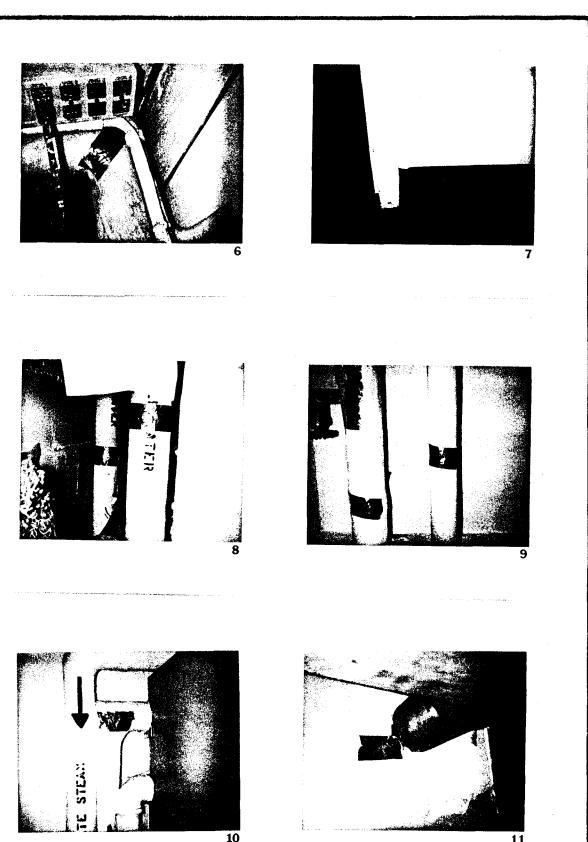
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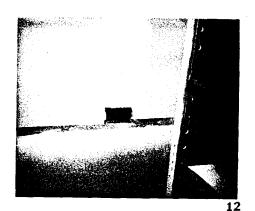


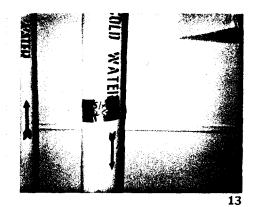
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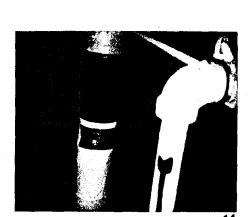
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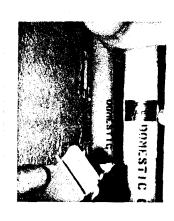


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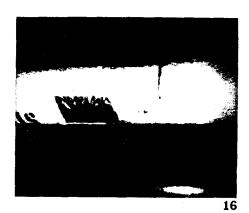




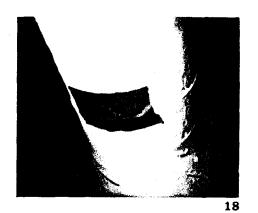


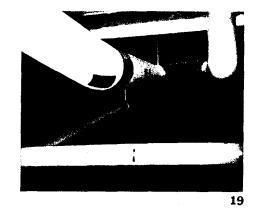


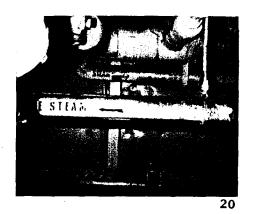


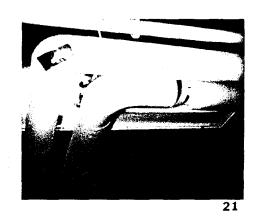


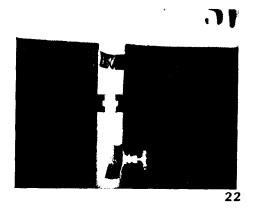


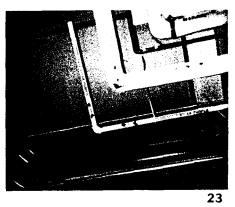


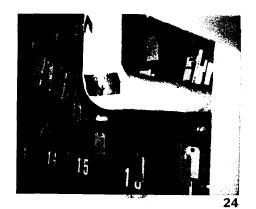


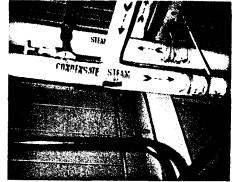


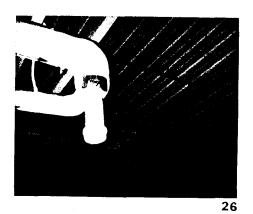


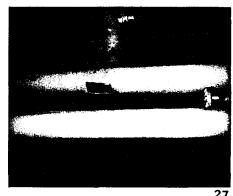


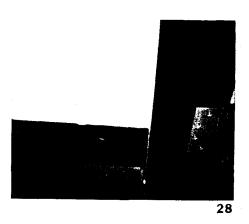


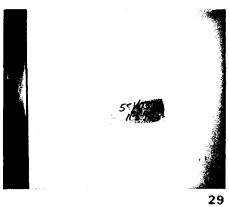


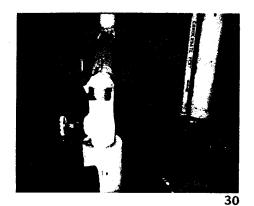


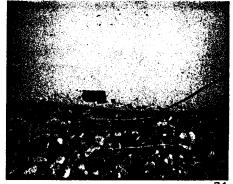


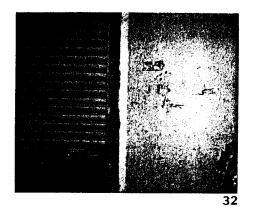




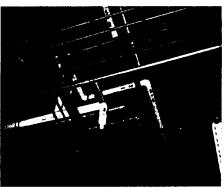




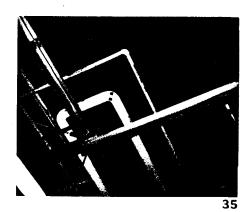




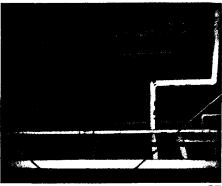




Δ SITEX







Appendix G.1.2

Historical Asbestos Characterization Reports

Bldg. 910





Asbestos and Lead Characterization Report Building 910 And Tank 215-D

Rocky Flats Environmental Technology Site

Prepared by:

Scientific Ecology Group for

Rocky Mountain Remediation Services

Revision 0 April 16, 1998



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1.0 INTRODUCTION

During the week of April 1-3,1998, Building 910 and Tank 215-D were inspected for asbestos in building materials and lead in paint by Scientific Ecology Group, Colorado (SEG) staff. This information is included in this report. The purpose of this inspection was to prepare for and facilitate the upgrades or demolition of the building.

The asbestos inspection was conducted according to the guidelines set forth by the Asbestos Hazard Emergency Response Act (AHERA) and complies with the United States Environmental Protection Agency (EPA), Occupational Safety and Health Administration (OSHA) and State of Colorado regulations covering asbestos inspections.

The lead in paint inspection was conducted in accordance with the guidelines established by the US Department of Housing and Urban Development(HUD) published the Guidelines for the Evaluation and Control of Lead Based Paint Hazards in Housing pursuant the Title X of the Housing and Community Development Act of 1992.

The enclosed report contains the location and descriptions of asbestos containing building materials and of metals containing paint on building surfaces. Materials were analyzed and results in tabular form are contained in Appendix A. Each sampled building material is described as either asbestos or non-asbestos containing. Each sampled painted surface is described as either metals or non-metals containing paint.



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2.0 ASBESTOS SURVEY

2.1 Inspection Procedures

Bulk samples were acquired to determine the presence of asbestos in building materials. Suspect materials were chosen based on historical significance or on the judgement of the accredited inspector. Each sample was assigned an individual number made up of the trailer number, the date the sample was acquired, the initials of the sampling technician, and a three digit number in sequence. Quality Control samples are designated in the Bulk Sample Data Table as (QC).

A total of 20 samples were acquired from suspected materials. These materials included thermal systems insulation and miscellaneous materials. All samples were acquired in a random manner representative of the suspected material.

All bulk samples were analyzed by Reservoirs Environmental Services, Inc. (RESI) of Denver, Colorado. RESI is accredited through the National Institute of Standards and Technology (NIST) and participates in the NIST National Voluntary Laboratory Accreditation Program (NVLAP) as required by the EPA. Bulk samples were analyzed by Polarized Light Microscopy (PLM) in compliance with guidelines established by the EPA 40 CFR 763, Subpart F, Appendix A. Asbestos concentrations were visually estimated and reported in percent by layer of each sample.

Colorado Regulation #8 provides regulatory guidance for asbestos control. As such, this regulation requires Point Count Analysis for certain conditions a d types of materials. Should a friable material analysis by PLM determine a detectable but less than 1% asbestos content, then that material must have Point Count Analysis. The bulk Sample Data Table will indicate such analysis with results in (parentheses).

2.2 Description and Hazard Assessment of ACM

2.2.1 Vapor Barrier Mastic on Pipes and Tank Insulation

Approximately 700 linear feet of Vapor Barrier Mastic coating on the Thermal Systems Insulation on the pipes associated with the steam heating system for the building. This system is located on both levels of the facility. Steam heaters are located in rooms 101, 102, 104 and the basement. At the time of inspection, this mastic was in good condition, with minor damage in isolated locations.

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The EPA/AHERA hazard assessment category for the vapor barrier mastic is "Thermal Systems insulation in good condition". The appropriate response action for the insulation is to maintain in good condition, periodically survey the system and repair observed damage. The insulation must be removed prior to demolition.

2.3 Description of Materials Testing Negative for Asbestos

2.3.1 Drywall, Tape and Joint Compound

The drywall system located on the north wall of room 102 was sampled in three locations. Analysis indicates no detectable levels of asbestos.

2.3.2 Mudded joints, End Caps ant Tank Insulation

The mudded joints, valve flanges, tank and tank end cap insulation found throughout the facility was sampled in seven locations. Analysis indicated a trace by PLM analysis. Point Counting results indicate no asbestos present. Please note that the Vapor Barrier Mastic associated with the pipe insulation on the steam heating system throughout the facility does contain asbestos.

2.3.3 Floor Filler and Carpet Adhesive

The floor filler and carpet adhesive found under the carpeting in room 102 were sample at one location. Analysis indicates no detectable levels of asbestos in these materials.

2.3.4 Brushed Textured Skim, Exterior

The tan brushed textured skim on the surface of the exterior wall cinderblock was sampled in five locations. Analysis indicates no detectable levels of asbestos. Please note that penetrations were made into the cinderblock to determine the presence of loose filler in the cinderblock. At the time of inspection, no filler was discovered.

2.3.5 Rubberized Wall/Pipe Penetration Filler

The rubberized filler for the wall penetrations was sampled in one



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location. Analysis indicates no detectable levels of asbestos.

2.3.6 Tank Insulation and Textured Coating

The foam tank insulation and white textured coating on the exterior of tank 215-D was sampled for asbestos. Analysis indicated no detectable levels of asbestos in these materials.

3.0 LEAD IN PAINT SURVEY

3.1 Inspection Procedures

Bulk paint samples were acquired from building surfaces to determine the presence of lead and other metals. Suspect paints were chosen based on historical significance or on the judgement of the accredited inspector.

A total of 11 samples were acquired from suspected painted surfaces. These surfaces included the interior and exterior paints, tank and tank stanchions, floor and stair paints. Samples were chosen for their distinct color variations. All samples were acquired in a random manner representative of the individual color.

Based on historical data from other site structures, the bright red paint associated with fire and safety markings was assumed to be metals containing.

All paint samples were analyzed by the Site Laboratory at Building 559. This lab is properly accredited for bulk paint analysis through the American Industrial Hygiene Association. Bulk paint samples were analyzed with Atomic Absorption Spectroscopy (EPA Method SW 846-3050/7420). Results for the purposes of determining occupational exposure are reported in parts per million.

3.2 Lead in Paint Locations and Descriptions



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Contained herein is a summary of the results of bulk samples for lead/metals in the paint on Building 910 and on Tank 215-D. Appendix B contains a Paint Chip Bulk Sample Data Table that summarizes the laboratory findings. Appendix B also includes copies of the laboratory data that details the analytical findings. TCLP analytical results are a valuable aid in waste stream determination, while ICP analytical results are a valuable aid to assessing worker health and safety.

Unless otherwise noted, all paints surveyed were in good condition.

3.2.1 Blue Paint on Metal Tank 1523, Stanchions and Base

The blue paint on red primer on Tank 1523, stanchions and base tested positive for detectable lead and other metals under ICP analysis, including chromium and zinc. The paint on the base mounting was flaking and peeling in several locations at the time of inspection.

3.2.2 Tan Paint on Metal Tank 1535, Stanchions and Base

The tan paint on red primer on Tank 1535, stanchions and base tested positive for lead, chromium, zinc and other metals under ICP analysis.

TCLP analytical results indicate chromium exceeding EPA Regulatory Levels. As such, disposal would require meeting RCRA hazardous waste disposal guidelines.

3.2.3 Green Paint on Metal Tank 1531, Stanchions and Base

The green paint on red primer on Tank 1531, stanchions and base tested positive for detectable levels of lead, chromium, zinc and other metals under ICP analysis.

3.2.4 Grey Paint on Metal Stanchions (Tank 1524)

The grey paint on red primer on the metal stanchions attached to Tank

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1524 tested positive for detectable levels of lead, chromium, zinc and other metals under ICP analysis.

TCLP analytical results indicate chromium exceeding EPA Regulatory Levels. As such, disposal would require meeting RCRA hazardous waste disposal guidelines.

3.2.5 Yellow Paint on Metal Stairs

TCLP analytical results indicate lead exceeding EPA Regulatory Levels. As such, disposal would require meeting RCRA hazardous waste disposal guidelines.

The yellow paint on red primer on the west basement stairs tested positive for detectable levels of lead, chromium, zinc and other metals under ICP analysis.

3.3.6 Grey Paint on Basement Concrete Floor

The grey paint on the basement concrete floor tested positive for detectable levels of lead, chromium, zinc and other metals under ICP analysis.

3.3.7 White Paint on Basement Concrete Walls

The white paint on the basement concrete walls tested positive for detectable levels of lead, chromium, zinc and other metals under ICP analysis. This paint is prevalent on the walls and ceiling throughout Building 910.

3.3.8 Off-White on Exterior Cinderblock Walls

The off-white paint on the exterior cinderblock walls tested positive for detectable levels of lead, chromium, zinc and other metals under ICP analysis.



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3.3.9 Brown-red on Metal Exterior of Gen-3

Due to the thinness of the application, adequate media was not acquired for TCLP analysis. However, the elevated level of chromium in the ICP analysis would indicate leachability. Prudence would dictate treating this paint as a RCRA hazardous waste.

The brown-red paint on the exterior sheet metal skin of Gen-3, located on the west side of B910 tested positive for detectable levels of lead, chromium, zinc and other metals under ICP analysis.

3.3.10 White Textured Paint on Tank 215D

The white textured paint on Tank 215D, located to the west of Building 910, tested positive for detectable levels of lead, chromium, zinc and other metals under ICP analysis.

Mercury was detected using ICP analysis. Mathemetical calculations indicate mercury above RCRA TCLP standards.

4.0 LEAD/METALS IN PAINT REGULATORY REVIEW AND RECOMMENDATIONS

4.1 Regulatory Review: Relocation/Recycling

In June, 1995, the US Department of Housing and Urban Development (HUD) published the Guidelines for the Evaluation and Control of Lead Based Paint Hazards in Housing pursuant to Title X of the Housing and Community Development Act of 1992. The document replaced the 1990 publication Lead Based Paint: Interim Guidelines for Hazard Identification and Abatement in Public and Indian Housing. The new publication addresses lead hazards posed by paint, dust and soil in the residential environment. It provides specific guidelines for XRF and bulk paint sampling in housing including sampling locations, sample collection procedures and laboratory analysis procedures. In addition, it provides guidelines for hazard



ASBESTOS AND LEAD CHARACTERIZATION REPORT FOR BUILDING 910 RF/RMRS-97-035 TOC, Rev. 0, Page 8 of 14 Date Effective: 08/06/97

assessment of lead based paint, abatement of lead based paint, and clearance sampling. The guidelines define lead based paint as paint that contains 1.0 milligrams or more of lead per square centimeter of surface area. Although the guidelines act as a good reference for lead paint inspections, they do not apply to non-HUD homes and are not enforceable by law unless a Federal, State or RFETS directive requires adherence to all or parts of the publication.

OSHA's CFR 1926.62 applies to the disturbance or demolition of structures that contain detectable levels of lead in paint. Detection limits of 10 parts per million are commonly the lowest limit normally achievable by standard laboratory analysis. At or below this limit OSHA believes exposure poses limited risk to workers.

However, if the employer suspects that lead may be present, the employee protection and safety precautions as outlined in CFR 1926.62 apply, especially employee medical surveillance and monitoring.

Other metals in paint, such as chromium and zinc, also require special precautions for worker health and safety. Consult a Health and Safety Professional prior to and during planning and implementation of activities that may disturb paints reported as or suspected of containing metals.

Disposal of materials coated with paints must pass Toxicity Characteristic Leaching Procedure (TCLP). Should analysis indicate meals or other contaminants listed as EPA Hazardous Waste above or at Regulatory Levels, RCRA regulatory drivers must be met for disposal.

Metals coated with paints, such as tanks and pipes, may be recycled without major regulatory requirements. Due dilligence may require notification to the reciever of the content of the paints.



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ASBESTOS BULK SAMPLE DATA TABLE

Sample Number	Sample Description and Location	Lab Result PLM (PC)
910-980325-MS- 012	TSI on steam condensate tank D-13; from basement; 15' N of S wall, 25' E of W wall, NE corner.	A: ND B: ND C: ND
910-980325-MS- 013	TSI on a stem condensate pipe; from basement, Send of Tank D-13, 3' S of S end, 3' from the floor.	A: ND B: ND
910-980325-MS- 014	TSI (A), (B) VBM (C) on a steam condensate valve; from basement, at SW corner of Tank D-13.	A: ND B: ND C: 8%
910-980325-MS- 015	TSI (A) (B) (D) (E) mud (C) on a steam surge tank; from basement, 15' N of S wall, 28' E of W wall, 5' from the floor.	A: ND B: ND C: TR (ND) D: ND E: ND
910-980325-MS- 016	TSI (A) (C) VBM (B) on a steam supply pipe fitting; from basement, 35' E of W wall, 2' N of S wall, 3' from the floor.	A: ND B: 8% C: ND
910-980325-MS- 017	TSI (B) VBM (A) on a chilled water supply pipe valve; from basement, 30' E of W wall, 25' N of S wall, 12' from the floor.	A: 5% B: ND
910-980325-MS- 018	TSI (B) (C) VBM (A) on a chilled water supply pipe fitting; from room 101, 10' N of door 11, 2' W of E wall, 10' from the floor.	A: 8% B: ND C: ND

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Sample Number	Sample Description and Location	Lab Result PLM (PC)
910-980325-MS- 019	Brushed textured skim on exterior wall cinderblock; from S wall, 15' W of SE corner, 4' from the ground. Note: block void not filled here.	A: ND
910-980325-MS- 020	Brushed textured skim on exterior wall cinderblock; from S wall, 8' E of SW corner, 4' from the floor. Note; block void grouted here.	A: ND
910-980325-MS- 021	Brushed textured skim on exterior wall cinderblock; from W wall, 9' N of SW corner, 4' from the ground. Note: block void not filled here.	A: ND
910-980325-MS- 022	Brushed textured skim on exterior wall cinderblock; from N wall, 15' E of NW corner, 4' from the ground. Note: block void grouted here.	A: ND
910-980325-MS- 023	Brushed textured skim on exterior wall cinderblock; from E wall, 11'S of NE corner, 5' from the ground. Note: block void empty here.	A: ND
910-980325-MS- 024	TSI (B) and white rubberized coating (A); from Tank 215-D west of 910, S end, 20' E of bldg, 4' from the ground.	A: ND B: ND
910-980325-MS- 025	TSI (A) (B) (C) mud (D) on an engine water supply pipe fitting; from room 101, 25' W of E wall, 20' N of S wall, 8' from the floor.	A: ND B: ND C: ND D: ND
910-980325-MS- 026	Floor patch and carpet adhesive; from room 102, at SW corner of door 101.	A: ND
910-980325-MS- 027	Drywall (E), tape (C) (A) and joint compound (B) with foam (D); from N wall room 102, 10' W of NE corner, 5' from the floor.	A: ND B: ND C: ND D: ND E: ND



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Sample Number	Sample Description and Location	Lab Result PLM (PC)
910-980325-MS- 028	Drywall (D), tape (A) and joint compound (B) with foam (C); from N wall room 102, 8' W of NE corner, 3' from the floor.	A: ND B: ND C: ND D: ND
910-980325-MS- 029	Drywall (C), tape (A) and joint compound (B); from N wall room 102, at NW corner, 4' from the floor.	A: ND B: ND C: ND
910-980325-MS- 030	Foam and fiber wall filler; from pipe penetration in room 103, 3' S of NW corner, 12' from the floor.	A: ND
910-980325-MS- 031 (QA)	Drywall (D), tape (B) (A) and joint compound (C) with foam (E); from N wall room 102, 8' W of NE corner, 3' from the floor.	A: ND B: ND C: ND D: ND

Note: ND means None Detected; TR means Trace



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PAINT CHIP BULK SAMPLE DATA TABLE

Sample Number	Sample Description and Location	Lab Result TCLP • (ICP)
910-980331-MS- 001	Blue over red primer on metal; from basement, north central, NDT Tank 1523, west side, 3 locations on tank post and base.	ND (lead, others)
910-980331-MS- 002	Tan over red primer on metal, from basement, east central, NDT Tank 1535, south side, 3 locations on tank, post and base.	chromium (lead, others)
910-980331-MS- 003	Green over red primer on metal; from basement, south central, NDT Tank 1531, west side, 3 locations on tank, post and base.	ND (lead, others)
910-980331-MS- 004	Grey/red primer on metal; from basement, northwest, NDT Tank 1524 stanchion, far south post.	chromium (lead, others)
910-980331 -MS - 005	Yellow/red primer on metal; from west basement stairs, south side at base.	lead (lead, others)
910-980331-MS- 006	Grey on concrete basement floor; near drain, 30' east of west wall, 20' north of the south wall.	ND (lead, others)
910-980331-MS- 007	White on concrete basement wall; from west wall, 15' north of southwest corner, 4' from the floor.	ND (lead, others)
910-980331-MS- 008	Off-white on exterior cinderblock; from south wall, 15' east of southwest corner, 4' from the ground.	ND (lead, others)
910-980331-MS- 009	Brown-red on sheet metal; from exterior of Gen 3, south side of 910, 2' west of southeast corner, 4' from base.	NA** (lead, others)
910-980331 - MS- 010	White textured on foam insulation; from Tank 215D, west of 910, east side at base.	ND (lead, others)
910-980331-MS- 011 (QA)	White textured on foam insulation; from Tank 215D, west of 910, east side at base.	mercury (lead, others)

Note: ND means None Detected.



^{*} Lab Results identify those metals exceeding EPA Regulatory Level

^{**}Not Analyzed

APPENDIX A

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Statement of Certification

The asbestos and lead building inspection evaluation performed on Building 910 and tank 215-D was performed in accordance with applicable regulations, and employed only EPA AHERA accredited personnel.

Inspector: Michael N. Schluterbusch

EPA Accreditation:

State of Colorado Certification:

I hereby attest and certify that I performed the asbestos and lead building inspection evaluation on trailers Building 910 and tank 215-D at Rocky Flats Environmental Technology Site

Signature: Multiple Date: 11/4/98



Appendix G.2

RLC Asbestos Characterization Report

Bldg. 551, 662, 709, 910, and 904 Pad

Appendix G.2.1 RLC Asbestos Characterization Report Bldg. 551, 662, 709, 910, and 904 Pad Chain of Custody

59336-1

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				N/A None
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9927116- 551-99-04-27-05- IH	551 1-NA N/A		IH02B001 (Asbestas by PLM) [Routine]	N/A None
99Z7116- 551-99-04-27-05- IH	551 1-NA N/A		IH02B001 (Asbestos by PLM) [Routine]	N/A None
99Z7116- 551-99-04-27-05- IH	551 1-NA N/A		IH02B001 (Asbestos by PLM) [Routine]	N/A None
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RFP F 3791.32 (7/95) Formerly RF-47530

Rocky Flats Environmental Technology Site

Golden, CO 80402-0464

Safety and Hygiene Chain of Custody Record and Analysis Request

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<u>ه</u> Lab Number 3 Time/Date Time/Date Time/Date Time/Date Page / ☐ Unbroken Ó Jewsel J Date: 5/19/99 REMARKS Received by Received by Received by Received by ☐ Broken Condition of Seal: Seal# (Release #) IH028001 Ž Comments: Signature: Bldg/Ext: 444/26727 Personal Area Buk Relinquished by Relinquished by Relinquished by Relinquished by M Industrial Hygiene Sample MEDIA Other Asbestos Samples Analysis Request 2 Rush Rush SAMPLE TIME Rush Rush 85.30 OC:3 520.29 Time/Date Time/Date Time/Date Time/Date Standard Service Standard VOLUME Floor tik Lifia Til liters and to the comment 800₩ Service 0-76-11 Title: 244 4 ANALYZE FOR H. Conzola Received by Received by Received by Reichars Asbestos 2122× KA Report and Billing Instruction Name of Originator: A. Gagzela P.O.#/Release: 09 - 50-50-51-50-64-50A 662-99-17-05-02 1642-59-05-17-05-01 Report To: Verbal To: (402.99-05-13-05-05 70-50-11-50-66-697 HO3-99 -05-13-05-04 BL2-99-65-13-05-07 642-94-05-13-05-08 Fax To: 167-99-05-13-05-09 Bill To: Relinquished by Relinquished by SAMPLE NUMBER BIdg/Y/M/D/P#/S# **Xellinguished** by Relinguished by 8561 Aspustos Kaiser-Hill DynCorp **RMRS** SSOC

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Green - Sample Custodian Blue - Originator

Yellow - Lab Copy

White - Return to Originator

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Golden, CO 80402-0464

RFP F 3791.32 (7/95) Formerly RF-47530

6922369

Safety and Hygiene Chain of Custody Record and Analysis Request

Number Time/Date ₹ Time/Date Time/Date Time/Date □ Unbroken Page 16 727 Date: 5/25/99 REMARKS Green - Sample Custodian Blue - Originator Received by Received by Received by ☐ Broken Received by Condition of Seal: Seal# (Release #) THOS BOD Comments: Signature: Bidg/Ext: 444/ Area Relinquished by Relinquished by 哥哥 Relinquished by Relinquished by Industrial Hygiene Sample A B 1 Other Asbestos Samples Analysis Request MEDIA ☐ 2 A Rush Yellow - Lab Copy SAMPLE Z¥ □ TIME 5-25-89 8:00 A 52199 Time/Date Time/Date Time/Date Time/Date Standard Service Standard Service VOLUME 2445 liters White - Return to Originator (50124 lez HELECTORICS NGILDOA Title: Regelyed by Received by Received by Rula Color Received by ANALYZE FOR 4 sbest Name of Originator: 4. Cox 24 4 Report and Billing Instruction P.O.#/Release: Report To: Verbal To: Fax To: Bill To: 821 Ashestos Cabine Relinquished by 20-20-45-20-48-80T 40-50-48-50-66-60 Relinquished by 10-50-75-50-66-60L elipauished by Relinquished by 10-50-42-50-66-606 SAMPLE NUMBER Bldg/Y/M/D/P#/S# Kaiser-Hill DynCorp SSOC **RMRS** WSI

Castoner Matrix Date Time Andre Gonzalez Phunber Biographics Biographics Phunber Time Time Diagraphics Biographics Received By: Diagraphics Received By: Diagraphics Received By: Diagrams Received By: Diagrams Received By:	Vnisar-Hill			۲	TATA IN	OTSITO AC	DV/SAM	PI,E AN	CHSTONY/SAMPLE ANALYSIS REQUEST	<u>۔۔۔۔</u>	766	100#011/Z66
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140 140	99Z7116	Customer	Ž	_	Time		No/Type Com	ग्रम्भार	Sample Analysis			Preservative; Packing
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Golden, CO 80402-0464

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Safety and Hygiene Chain of Custody Record and Analysis Request

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Page 1 of Lab Number Time/Date Time/Date Fime/Date (W 70) Date: 4/29/99 REMARKS Received by Received by Received by 2 40 2 Bool Bidg/Ext: 444/ XUZ Personal Area Bulk Relinquished by Relinquished by Relinquished by 90 **4** 0 13 MEDIA SAMPLE TIME 4 Time/Date / 29/199 Sog (129/11 Time/Date (500 04/14/9 VOLUME liters 2445 Title: Assess for ANALYZE FOR Received Name of Originator: A. 6012462 1. sets 20-50-12-40-64-016 910-99-04-27-05-02 557:47:47:45:125 50-50-17-00-66-155 10-50-67-60-66-016 40-50-LT. 10-66-195 40-50-LT-40-66-155 10-50-17-40-65-155 351-99-04-27-05-010 10-50-12-10-66-155 garshed by Vd badsinpail SAMPLE NUMBER BIdg/Y/M/D/P#/S#

Green - Sample Custodian Blue - Originator Yellow - Lab Copy White - Return to Originator

Time/Date

Received by

Relinquished by

□ Unbroken

Broken

Analysis Industrial Hygiene Sample

Analysis Request

Time/Date 845

Received by

Comments: Signature:

Other

□ \$ 8 Rush

Standard Service

Receiving

P.O.#/Release:

Lab:

Rush

Asbestos Samples

Other

Rush

Standard Service

A. 6012942

Report To:

Bill To:

DynCorp

WSI

A. GOALALL

Verbal To:

Kaiser-Hill

Fax To:

RMRS SSOC

Report and Billing Instruction

Relinquished by #81 Asbestos Cabinet

Seal# (Release #) Condition of Seal:

ConfisciPRequester ConfisciPRequester ConfisciPRequester ConfisciPRequester ConfisciPRequester ConfisciPRequester ConfisciPReducer	
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Poygraph Power P	
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Golden, CO 80402-0464

Safety and Hygiene Chain of Custody Record and Analysis Request

9928273

Page / of /	Lab Number		2					Ime/Date	Time/Date	Time/Date	Time/Date		🗌 Unbroken				
7 Date: 6/19/99	REMARKS	TH023001	*					Received by	Received by	Received by	Received by	Seal# (Release #)	Condition of Seal:	Signature: Comments:		Blue - Originator	
Bidq/Ext: 444 / x6727	11 40 00 141	NA- NA K	* * * *	10/6	maked of the			Relinquished by	ate Relinquished by	Date Relinquished by	ate Relinquished by	Analysis Request	Industrial Hygiene Sample	Rush OtherAsbestos Samples	24 2 Offier	Rush Rush	
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	SAMPLE NUMBER	-90-66-196 -90-66-196	904.99-06					Relingu	Relingu	SSI Asbestos Relinqu	Relinqu		量	RMHS SSOC	DynCorp L		

Appendix G.2.2

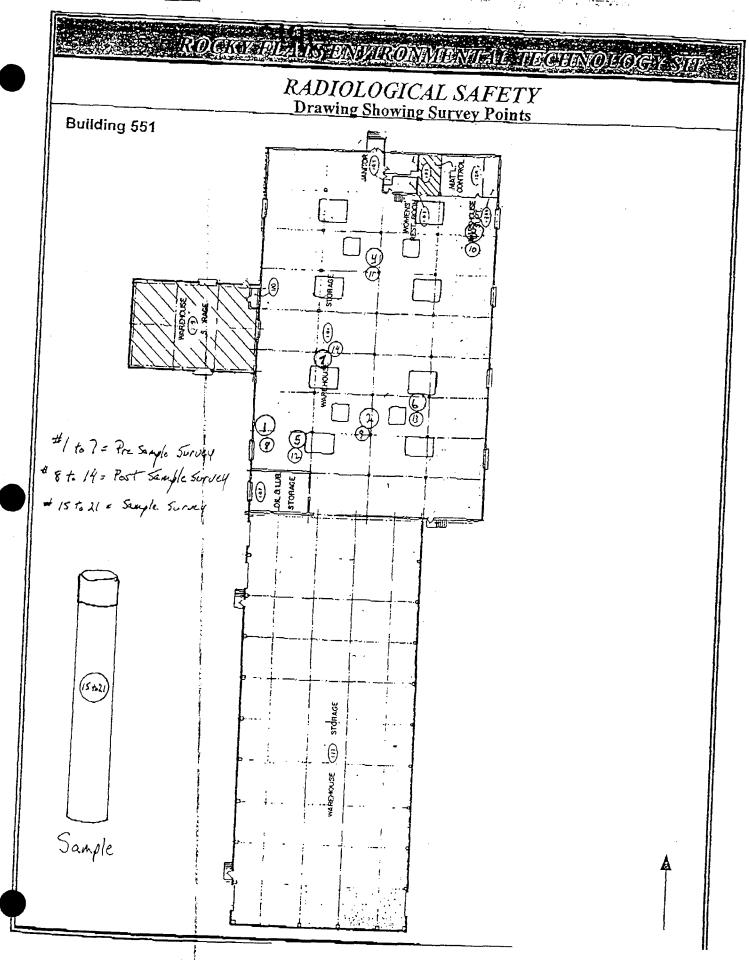
RLC Asbestos Characterization Report

Bldg. 551, 662, 709, 910, and 904 Pad

Radiological Release Survey Results



ROCK	Y FLATS ENVIRONM	TENTAL TECHNOLOGY SITE
INSTRUM	MENT DATA	UKIG.
Mfg EBERLINE Mfg, E	BERLINE MIGEBERLINE	Survey Type: Contamination Survey
15	BC-4 Model SAC-4	Building: 55/
Serial # 838 Serial #		Location: Ware House
Cal Due7/13/99 Cal Due		Purpose: CHARACTERIZATION SURVEYS
Bkg. 39 Bkg.		
	cy 25% Efficiency 33%	RWP#: - NA
12	<200 MDA <20	
	1	Date: 04-27-99 Time: 1800
Mfg. EBERLINE Mfg. 1	NE TECH_Mfg.NE TECH	
	LECTRA ModelELECTRA	
Serial # 1188 Serial #		Print name Signature
11	8-/2-99 Cal Due 8-/2-99	A .
11	3 Bkg. : 496	RCT: N
	cy 22.7% Efficiency 3/.1%	Print name Signature Emp. #
MDA <20 MDA	49 MDA 3/8	
PRL#:	· /·	5'4- D-14. 1 11
Comments	Sampling Fret	Post Survey Result + Sample Survey
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Date 4/28/94	1000 100 -00 10	ooper 1 Hetly I Co
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Cal Due 7/13/99 Cal Due				bestor San	moline - Pre	+ BST Job
[]	37 B] ^ - P · · · · · · · · ·		7	
Efficiency 25% Efficien			RWP#: - N.	n —		
1		DA <20_		<u> </u>		
			Date: 05-13-	99	Time: /	745
Mfg. EBERLINE Mfg. 1	NE TECH M	Ifg. NE TECH			~ 0	1
Model SAC-4 Model E		-	A RCT: ROX S	nWER 1.	Kelind	,
Serial # 1188 Serial #			- ·	name	Signatu	r e
Cal Due6/16/99 Cal Due	8-1-98 C	al Due 8-2-98				$\overline{\mathcal{A}}$
Bkg. 0.1 Bkg.	5 B	kg. <u>500 m</u>	RCT:			
Efficiency 33% Efficient	у <u>12.0%</u> Е	fficiency 32.0%	Print	name	Signatur	re Emp. #
MDA <20 MDA	60 M	DA 320				
PRL#:						. *
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# 10 to 18 SUMMER &	n Samples	1thru9	# 19 to 27 Po	ST Job 9	res Sur	144
All Results Are In dpm/100	cm2					(
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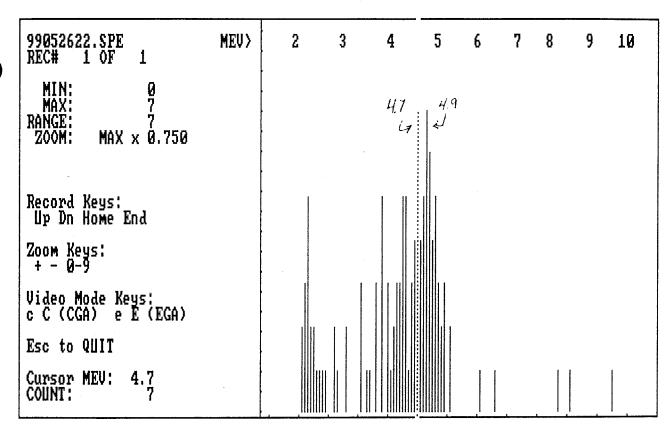
RADIOLOGICAL SAFETY
Drawing Showing Survey Points (16-18) = Samples // = 2 3 FLOOR 17-8 8 Dry wall 18= 9 Ceiling S Centrag 27=7 20= 8 21= 1 Sample Container Floor Floor (10- 19 3 Dyual Building 662

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		INSTRUM	ENT DATA		ı		CONTY LACE	NATION		
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記い_ 3. 好 感.	420 420 420 420 420 420	BETA	72 60 156 <52	RECT  BETA  <343  <343  <343  <343  <343  <343  <343	23. 24. 25. 26.	REMO\ ALPHA		A		
対のN_ 3. YY _ ぶ。	420 420 420 420 420 420 420 420	2200 2200 2200 2200 2200 2200 2200 220	72 60 i56 <52 72	RECT  BETA  <343  <343  <343  <343  <343  <343  <343	23. 24. 25. 26. 27.	REMO\ ALPHA		A		
計のU_ 3. 4. 4. 4. 4. 4. 7	41PHA 420 420 420 420 420 420 420 420 420	BETA	72 60 156 <52 12 132 90	RECT    BETA     <343     <343     <343     <343     <343     <343     <343     <343     <343     <343     <343     <343     <343     <343     <343     <343     <343     <343     <343     <343     <343     <343     <343     <343     <343     <343     <343     <343     <343     <343     <343     <343     <343     <343     <343     <343     <343     <343     <343     <343     <343     <343     <343     <343     <343     <343     <343     <343     <343     <343     <343     <343     <343     <343     <343     <344     <345     <345     <345     <345     <345     <345     <345     <345     <345     <345     <345     <345     <345     <345     <345     <345     <345     <345     <345     <345     <345     <345     <345     <345     <345     <345     <345     <345     <345     <345     <345     <345     <345     <345     <345     <345     <345     <345     <345     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35     <35	23. 24. 25. 26. 27. 28.	REMO\ ALPHA		A		
別のW_ 3 4 4 4 7 8	420 420 420 420 420 420 420 420 420	BETA	72 60 156 <52 72 132 90	RECT  BETA  <343  <343  <343  <343  <343  <343  <343  <343  <343  <343	23. 24. 25. 26. 27. 28. 29.	REMO\ ALPHA		A		
かい_ 3. 4. 5. 6. 7. 8. 9.	420 420 420 420 420 420 420 420	BETA	72 60 156 <52 12 132 90 66 300	RECT  BETA  4343  4343  4343  4343  4343  4343  4343  4343  4343  4343  4343	23. 24. 25. 26. 27. 28. 29.	REMO\ ALPHA		A		
所のN_ 3. 4. 4. 4. 6. 7. 8. 9. 110.	420 420 420 420 420 420 420 420 420	BETA	72 60 156 <52 72 132 90	RECT  BETA  <343  <343  <343  <343  <343  <343  <343  <343  <343  <343	23. 24. 25. 26. 27. 28. 29. 30. 31.	REMO\ ALPHA		A A		
京のN_ 3. 4. 5. 6. 7. 68. 9. 10. 14.	420 420 420 420 420 420 420 420	BETA	72 60 156 <52 12 132 90 66 300	RECT  BETA  4343  4343  4343  4343  4343  4343  4343  4343  4343  4343  4343	25. 24. 25. 26. 27. 28. 29. 30. 31. 32.	REMO\ ALPHA	BETA			
京のN_3. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4	420 420 420 420 420 420 420 420	BETA	72 60 156 <52 12 132 90 66 300	RECT  BETA  4343  4343  4343  4343  4343  4343  4343  4343  4343  4343  4343	23. 24. 25. 26. 27. 28. 29. 30. 31. 32. 33.	REMO\ ALPHA	BETA	60 99		
7. 6. 7. 6. 7. 6. 12. 13.	420 420 420 420 420 420 420 420	BETA	72 60 156 <52 12 132 90 66 300	RECT  BETA  4343  4343  4343  4343  4343  4343  4343  4343  4343  4343  4343	23. 24. 25. 26. 27. 28. 29. 30. 31. 32. 33. 34.	REMO\ ALPHA	BETA			
7. 68. 9. 10. 12. 13. 14.	420 420 420 420 420 420 420 420	BETA	72 60 156 <52 12 132 90 66 300	RECT  BETA  4343  4343  4343  4343  4343  4343  4343  4343  4343  4343  4343	25. 24. 25. 26. 27. 28. 29. 30. 31. 32. 33. 34. 35.	REMO\ ALPHA	BETA			
7	420 420 420 420 420 420 420 420	BETA	72 60 156 <52 12 132 90 66 300	RECT  BETA  4343  4343  4343  4343  4343  4343  4343  4343  4343  4343  4343	23. 24. 25. 26. 27. 28. 29. 30. 31. 32. 33. 34. 35. 36.	REMO\ ALPHA	BETA			
A 10 M 3 M 4 8 8 9 10 11 12 13 14 15 16 16 16 16 16 16 16 16 16 16 16 16 16	420 420 420 420 420 420 420 420	BETA	72 60 156 <52 12 132 90 66 300	RECT  BETA  4343  4343  4343  4343  4343  4343  4343  4343  4343  4343  4343	23. 24. 25. 26. 27. 28. 29. 30. 31. 32. 33. 34. 35. 36. 37.	REMO\ ALPHA	BETA			
7. 68. 9. 10. 12. 13. 14. 15. 16. 17.	420 420 420 420 420 420 420 420	BETA	72 60 756 552 72 72 732 90 66 300 786	RECT  BETA  4343  4343  4343  4343  4343  4343  4343  4343  4343  4343  4343	23. 24. 25. 26. 27. 28. 29. 30. 31. 32. 33. 34. 35. 36. 37. 38.	REMO\ ALPHA	BETA			
7	420 420 420 420 420 420 420 420	BETA	72 60 156 <52 12 132 90 66 300	RECT  BETA  4343  4343  4343  4343  4343  4343  4343  4343  4343  4343  4343	23. 24. 25. 26. 27. 28. 29. 30. 31. 32. 33. 34. 35. 36. 37. 38. 39.	REMO\ ALPHA	BETA			
7. 8. 9. 14. 15. 16. 17. 18. 19.	420 420 420 420 420 420 420 420	BETA	72 60 756 552 72 72 732 90 66 300 786	RECT  BETA  4343  4343  4343  4343  4343  4343  4343  4343  4343  4343  4343	23. 24. 25. 26. 27. 28. 29. 30. 31. 32. 33. 34. 35. 36. 37. 38. 39. 40.	REMO\ ALPHA	BETA			
3. 4. 5. 6. 7. 8. 9. 10. 12. 13. 14. 15. 16. 17. 18.	420 420 420 420 420 420 420 420	BETA	72 60 756 552 72 72 732 90 66 300 786	RECT  BETA  4343  4343  4343  4343  4343  4343  4343  4343  4343  4343  4343	23. 24. 25. 26. 27. 28. 29. 30. 31. 32. 33. 34. 35. 36. 37. 38. 39. 40. 41.	REMO\ ALPHA	BETA			





AP-2 # A-119 CAL. DUE 6-18-99

BLD. 709 HOT SPOT

Ket / Strell 5/26/99 1500

Dote: 5-26-99 Reviewed Leonger /L.N. Cooper 5/2837 RCTForenen

505



# ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

	I	NSTRU	MENT DATA								
fg.:	EBERLINE	Mfg.:	EBERLINE	Mfg.:	EBERLINE	Survey Typ	e: CC	NTAM SI	URVEY		
odel	SAC4	Model	SAC4	Model	BC4	Building:	709				<del></del>
Serial #	1081	Serial #	818 .	Serial #	775	Location:	N/A				
Cal Due	10-6-99	Cal Due	7-19-99	Cal Due	6-2-99	Purpose:	CONTA	M SURV	EY FOR A	SBETOS	SAMPLE
Bkg.	0.1	Bkg.	0.3	Bkg.	42	RWP#:	N/A				
Eff.	33%	Eff.	33%	Eff.	25%	PRL #:	N/A				
MDA	20	MDA	20	MDA	200	PRE #:	N/A				
	# · · ·										
Mfg.:	EBERLINE	Mfg.:	NE	Mfg.:	NE	Date:	05-25	-99	Time:	10	00:00
Model	BC4	Model	ELECTRA	Model	ELECTRA				7 (/ -	1	
Serial #	842	Serial #	725	Serial #	725	REX SNY	DER '	1 1	2/XM)	E-	
Cal Due	6-28-99	Cal Due	10-29-99	Cal Due	10-29-99	RCT NAME	3	SIG	NATURE		
Bkg.	44	Bkg.	3	Bk⊕∽	526						<del></del>
Eff.	25%	Eff.	23.0%	Eff.	33.1%	N/A		/	N/A	/	N/A
MDA	200	MDA	47	MDA	328	RCT NAME	)	SIGN	NATURE	Е	MPLOYEE#
Commen	its: THIS SU	RVEY C	CONTAINS PRE	-SAMPL	E, POST-SAMI	PLE, & SAM	PLE REL	EASE RO	T SURVEY	INFOR	MATION

## **SURVEY RESULTS**

			<u>ALPHA</u>			<b>BETA</b>	
SWIPE	LOCATION	SWIPE	DIRECT	WIPE	SWIPE	DIRECT	WIPE
#	BUILDING 709 COMPONENTS	DPM/100CM2	DPM/100CM2	DPM/WIPE	DPM/100CM2	DPM/100CM2	DPM/WIPE
i	PRE-S PIPE ON N/S	<20	72	N/A	<200	<328	N/A
_2	PRE-S SMALL PIPE ON W/S	<20	66	N/A	<200	<328	N/A
3	PRE-S LARGE PIPE W/S	<20	600	N/A	<200	669	N/A
4	PRE-S SMALL VERTICLE PIPE W/S	<20	54	N/A	<200	<328	N/A
5	PRE-S SMALL HORZ. PIPE W/S	<20	84	N/A	<200	792	N/A
_6	POST-S PIPE ON N/S	<20	48	N/A	<200	<328	N/A
7	POST-S SMALL PIPE ON W/S	<20	78	N/A	<200	<328	N/A
8	POST-S LARGE PIPE W/S	<20	402	N/A	<200	<328	N/A
9	POST-S SMALL VERTICLE PIPE W/S	<20	54	N/A	<200	<328	N/A
10	POST-S SMALL HORZ. PIPE W/S	<20	126	N/A	<200	824	N/A
11	SAMPLE 1	<20	<47	N/A	<200	<328	N/A
12	SAMPLE 2	<20	<47	N/A	<200	<328	N/A
13	SAMPLE 3	<20	<47	N/A	<200	<328	N/A
14	SAMPLE 4	<20	<47	N/A	<200	<328	N/A
15	SAMPLE 5	<20	<47	N/A	<200	<328	N/A
16							
_ 17							<b></b>

M Cooper
Print Name Reviewed: 5-26-99 RS Supervision: Signature

THE RESPONDENCE					
ROC	KYFLAT	S ENVIRONA	MENTAL TECHN	OLOGYSITE	
17	JMENT DAT		•	UINA	
Mfg. EBERLINE Mfg.	EBERLINE	MfgEBERLINE	Survey Type:	Contamination	Curaron
Model BC-4 Model	_BC-4	Model SAC-4	Building: 910	- Contamination 1	zurvev
Senal # 838 Serial	# 874	Serial # 959	Location:		
Cal Due //13/99 Cal Di	ie 6/7/99	Cal Due 7/5/99	Purpose: CHARACT	FRIZATION SLIP	VEVC
Bkg. 39 Bkg.	38	Bkg. 0.2	xposo: OXXXIII QI	ELGENTION DOL	VEIS
Efficiency 25% Efficie	ncy 25%	Efficiency 33%	RWP#: 99-9	91-0044	
MDA_<200MDA_	<200	MDA <20			
i	<u>:</u>		Date: 04-17-99	Time: 190	
Mfg. EBERLINE Mfg.	NE TECH	Mfg.NE TECH	• •		
Model SAC-4 Model	ELECTRA	Model FI FCTRA	RCT: Rex SnyDL	to Kar ly	1
Serial # 1188 Serial ?	4 1682	Serial # 1/82	Print name	Signature	7
Cal Due <u>6/16/99</u> Cal Du	e 8-12-99	Cal Due 8-/2-59	_	Oignature	,
Bkg. O.1 Bkg.	3	Bkg. 496	RCT: N	A	
Efficiency 33% Efficien	icy_22.3%	Efficiency 3/./%	Print name	Signature	Emp. #
		MDA 3/8	2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Oignaim	- Емр. #
	·				
PRL#:	<u>*</u>	,			
Comments Survey Po	into on R	oof Pre A	shestes + Post,	Veherter Sum	es Resilts
- 13 are port	Asbestus Resi	11tf			7 1130/12
All Results Are In dpm/100	km2	• •			
		SURVEY R	ESULTS		
Removable		ect	5		
Alpha Beta	Ì		Removable		
-	1 upina	Beta	Alpha Beta	a Alpha	Beta
1. < 20 < 20a 2. < 70 < 200	< 49		23.		
2. <del>200</del> <del>200</del> 200	4 49		24		
4. < 20 < 200	< 49 < 49		25		
5. < 20 < 200	- 49		6		
6. < 10 < 200	× 49		77		
7. < 20 ( 200	<u> </u>		9		
8, < 20 (100	84	709 3	0.		<del></del>
9. < <u>70</u> < <u>708</u> 10. < <u>708</u>	< 49	<u>7707</u> 3	1.		]
44.4.5.6	-90		2		
11. 10 < 200 12. 20 < 208	<u> </u>		3	__	
13. 20 . 200	× 49 × 49		4		
14. < 20 < 200	49	,	5		
15. 20 < 200	49		6 7		
16. 20 4 200	< 49		7 9	<del>-</del>	
17.			9		—— II
18	3		)		———
20.	-		1		
21.	-	•	2.	<del></del>	
22	-		3		
Date 4/28/99	DC Cuma-		1	A VIA	
-1/00/17.	, wo superv	Ision:	per 1 A	My Illan	
		- v Finith		Signature 2	Day.

Made James James

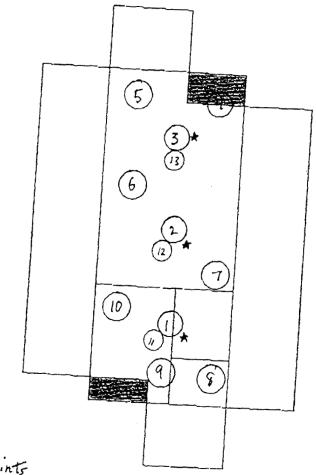
507

# OCKY FLATS DYVIRONIZIENITAL TECHNOLOGY STI

# RADIOLOGICAL SAFETY Drawing Showing Survey Points

Building 910 - First Floor Roof

#/ to 3 Indicate Asbestor Sample Location # 1 to 10 Indicate Certain Survey Locations # 11 to 13 Indicate Part Sample Survey



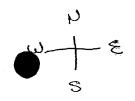
A Asbestos Sample points

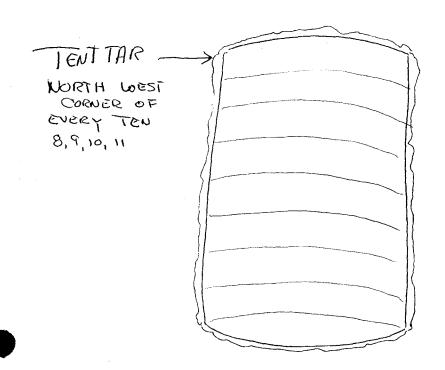
(4 % 1L

Sample



		ROCKY	FEA	TSE	VVIR	Э <i>М</i> М	ENI	AL TECHNOLOGY S	ITE:		
		INSRUMEN		**********		******					
l i		Mfg. <u>GBER</u> (		lfg		~ <del>,</del>		ey Type:			
1		Model SPC-		lodel		_	Buile				
		Serial# 191		erial#	1/1		1	tion: PAD		<i>(</i> –	
Cal I	Due 11-15-97	Cal Due 10-26	<u>-53 </u> C	al Due	X/4	· 	Purp	ose: Survey of TAR	AROUN	d TENte	
Bkg.		Bkg. <u>0.7</u>		kg(	15			,			
Effici	ency <u>53%</u>	Efficiency 33	% E1	fficiency	<u>/હ</u>	<del></del>	RWI	"#: <u>WA</u>			
MDA	20	<u>مع _</u> MDA	M	IDA 🖊			}	<b>)</b>			
		) (C	. 14	rc			Date	6-17-99	Time: 1	4:00	
		Mfg. ERERAIN		lfg. <u>Nf</u>			DCT	: CPHEPP /	NON		
13		Model 7-C-4 Serial# 914		lodel <u>Ei</u> erial#		<u>1</u>	KCI.	Print name	Signatu	re l	
ll l		Cal Due 8-9-9		al Due		_		I the hanc	Oigilata		
Bkg.		Bkg. 36		kg. S			RCT	: L HANKINS I	1- 1-		
		Efficiency Qs	D	ficiency	<u>. عوي</u> جر تا ۱۶	<u>~</u>	1.01	Print name	Signatu	ire	
MDA		MDA	<u> </u>	IDA 3	(3 <u>5 33.</u> = 38 _{30.}	<u>.                                     </u>	İ	Time patrio	J.6		
PRL Com	#: U F	NA									
		<del> </del>	<del></del>		SU	RVEY	RES	ULTS	····	20	
Sw	Location/I	Description	Remo	ovable	To	otal	Swipe	Location/Description	Removal	ble 1	Total
#		PM/100CM ²	Alpa	Beta	Alpa	Beta	#	Results in DPM/100CM ²	Alpa E	Beta Alpa	Beta
1	TENT	8	<b>حری</b> ه	L200	<b>&lt;56</b>	<340	16				
2	TENT	9	<b>≺</b> 20	2000	<b>≺5</b> 6	<b>&lt;340</b>	17				
3	TENT	10	<b>≺</b> 26	1200	₹56	<340	18				
4	TENT	11	420	<200	<5€	<b>&lt;340</b>	19				
5							20		<u> </u>		-
6					/		21				<u> </u>
7				/			22		/9		
8							23	/	19	_	
9			100				24		<del> </del>		
10			1	<b> </b>	!		25	- Ve	-		
11		_/6'	<u>'</u>				26				
12					<b></b>		27				
13					<u> </u>		28				-
				<b></b>			29				
15							30	/			
Date	Reviewed:	6-17-99	RS Su	pervisi	on:	(N)	Deint	per 1 Sula	Of W ighature		





# Appendix G.2.3

**RLC Asbestos Characterization Report** 

Bldg. 551, 662, 709, 910, and 904 Pad

**Laboratory Data** 

# RESERVOIRS ENVIRONMENTAL SERVICES, INC. NVLAP Accredited Laboratory #1896

TABLE I. PLM BULK ANALYSIS, PERCENTAGE COMPOSITION BY VOLUME

RES Job Number: Client: Client Project: Date Samples Received: Analysis Type: Turnarcund:		RES 597 Kaiser-H 99Z7111 May 04, PLM Shc 24 Hour	Kaiser-Hill Company, LLC 99Z7116, On Site Sample Analysis A. Gonzalas May 04, 1999 Note: PLM Short Report, Bulk	onzales Note: The AHERA o	nzales Note: The US EPA requires use of stratified analysis for NESHAP and AHERA compliance. Composite results only apply for specific exceptions.	es use of a	stratifi ults o	fied ar	nafysi: oply fe	is for NE for spec	NESH	IAP a	ind ptions.
Client Sample Number	Lab ID Number	- a > a -	Physical Description	Portion of Total Sample (%)	ASBESTOS CONTENT BY LAYER Mineral Visu (%)	NTENT  Visual  Visual  Estimate  {%}	Non E C E	-Asbe Comp G L L A S S	Non-Asbestos Fibraus Components (%) C G S H W E L Y A O L A N I L L S T R L S H	Fibrai ts (9 H W A O I L R L	0us (%) W T O A C A L C	O F H B E	Non-Fibrous Components (%)
551-99042705-01	EM 403164	<b>∢a</b> ∪	Tan fibrous perlitic material Black tar Black tar w/black fibrous tar & tan fibrous material	10 25 65	Chrysotile	ON ON ON	50	0 0 25	000	000	000	000	50 90 70
551-99042705-02	EM 403165	<b>∀</b> m ∪	Tan fibrous perlitic material Black fibrous tar Black tar w/multicolored rock fragments	25 25 50		222	200	040	000	000	000	000	50 60 100
551-99042705-03	EM 403166	4 m O	Black fibrous tar Tan fibrous perlitic material Black tar w/multicolored rock fragments	20 35 45		N N N	0 20 0	000	000	000	000	000	60 50 100
551-99042705-04	EM 403167	4 th O	Black fibrous tar Tan fibrous perlitic material Black tar w/multicolored rock fragments	15 35 50		000	0 20 0	0400	000	000	000	000	60 50 100
551-99042705-05	EM 403168	<b>∢</b> ⊞∪	Tan wood Black ter w/silver paint Black fibrous tar	255 70	Chrysotile	<u>8 - 8</u>	97	3000	000	000	000	000	800 V
ND = None Detected CELL = TR = Trace, < 1% Visual Estimate	CELL = Cellulose		ORG = Organic Trem-Act = Tremolite-Actinolite	WOLL = W BRUC = B	= Wolfastonite = Brucite	GVP = Gypsum SYNTH = Synthetic	Synthet		Analyst: PDL	PDL			His OA

# RESERVOIRS ENVIRONMENTAL SERVICES, INC. NVLAP Accredited Laboratory #1896

TABLE I. PLM BULK ANALYSIS, PERCENTAGE COMPOSITION BY VOLUME

RES Job Number: Client: Client Project: Date Samples Received: Analysis Type: Turnaround:		RES 59726-1 Kaiser-Hill Company, LLC 9927116, On Site Sample May 04, 1999 PLM Short Report, Bulk 24 Hour	Analysis A	Gonzales Note: Th AHERA o	nzales Note: The US EPA requires use of stratified analysis for NESHAP and AHERA compliance. Composite results only apply for specific exceptions.	es use of posite re	stratíf sults o	ieda nlya	nalysi pply 1	is for for sp	NES	HAP	and eptions,	
Client Sample Number	Lab ID Number	- a - A - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B - C - B -	Physical Description	Portion of Total Sample (%)	ASBESTOS CONTENT BY LAYER Mineral Vist	FR Visual Estimate	Non C	Asb Comp G L L A S	Non-Asbestos Fibrous Components (%) C G S H W E L Y A O L A N I L L S T H L	Fibro (18 ( H V A )	1	+ A − 1 0 H = H = H = H = H = H = H = H = H = H	N. n-Fibrous Components (%)	us
551-99042705-06	EM 403169	A Black tar layers) B Black fibu	Black tar w/silver paint {2 blk tar layers} Black fibrous tar w/black tar	30	Chrysotile	10 UN	0 0	0 0 25		0 0	0 0	0 0	80	
551-99042705-07	EM 403170	A Tan wood B Black tar w/silve C Black fibrous tar	Tan wood Black tar w/silver paint Black fibrous tar	. 5 25 70	Chrysotile	ND 25 ND	97	0 0	000	000	000	000	3 72 65	
910-99042705-01	EM 403171	A Tan fibro B Black fib	Tan fibrous perlitic material Black fibrous tar w/black tar	30		Q Q	50	0	00	00	00	0 0	50	
910-99042705-02	EM 403172	A Tan fibrous perli w/yellow foam B Black fibrous tar	Tan fibrous perlitic material w/yellow foam Black fibrous tar	90		Q Q	09	30	0 0	0 0	0 0	0 0	40	
910-99042705-03	EM 403173	A Tan fibro B Black fib	Tan fibrous perlitic material Black fibrous tar w/black tar	40		20	50	30	00	00	00	0 0	50	
ND = None Detected CELL = TTace, < 1% Visual Estimate	CELL = Cellulose Estimate	= Cellulose ORG = Organic te Trem-Act = Tre	ORG = Organic Trem-Act = Tremalite-Actinolite	WOLL ≈ Wollast BRUC = Brucite	conite	GYP = Gypsum SYNTH = Synthetic	Synthet	J				1	YO RIP	



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# RESERVOIRS ENVIRONMENTAL SERVICES, INC.

NVLAP Accredited Laboratory #1896

TABLE I. PLM BULK ANALYSIS, PERCENTAGE COMPOSITION BY VOLUME

RES 60177-1

Date Samples Received: RES Job Number: Analysis Type: Client Project: Turnaround: Client:

Kaiser-Hill Company, LLC
9977560, On-Site Sample Analysis, A. Gonzalez
May 20, 1999
PLM Short Report, Bulk
AHERA compliance. Composite results only apply for specific exceptions.
24 Hour

Client	Cl qe7	7	Physical	Partion	ASRESTOS CONTENT	N	Δ-0	Non-Ashestos Eibrous	ii a	32.0			Man Eibrain	٠,
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					Estimate	_1	S	<b>!</b>	Œ	4	U	ш		. U U
		1			(%)		S	r				Œ		•
662-99051305-01	EM 407103	4 8	Tan resin White tile	95	Q N	0	00	00	00	00	00	00	65 65 65 65	
662-99051305-02	EM 407104	4	White tile	100	QN	0	0	0	0	0	0	0	100	اسداد
662-99051305-03	EM 407105	∢ m	Tan resin White tile	10 90	QN QN	00	00	00	00	00	00	00	001 001	0 + TT / 1
662-99051305-04	EM 407106	4	White fibrous perlitic material w/white paint	100	QN	09	0	0	0	0	0	0	40	
662-99051305-05	EM 407107	4	White fibrous perlitic material w/white paint	100	Q	60	0	0	0	0	0	0	40	•
662-99051305-06	EM 407108	∢	White fibrous perlitic material w/white paint	100	Q	90	0	0	0	0	0	0	40	
662-99051305-07	EM 407109	∢ α	Tan fibrous material White plaster	15 85	N N	95	00	00	00	00	00	00	95 95	
662-99051305-08	EM 407110	<b>∢</b> ₪	Tan fibrous material w/white paint White plaster	20 80	GN ON	80 5	00	00	00	00	00	00	20 95	
ND = None Detected CELL = TR = Trace, < 1% Visual Estimate	CELL = Cellulose ORG = Organic Il Estimate Trem-Act = Tre	ORG	DRG = Organic Trem-Act = Tremolite-Actinolite	WOLL = Wollas BRUC ≈ Brucite	= Wollastonite GYP = Gypsum = Brucite SYNTH = Synthetic	sum Synthet	2	Analyst: PDL	## PG			76	O. C.	



# RESERVOIRS ENVIRONMENTAL SERVICES, INC.

NVLAP Accredited Laboratory #1896

TABLE I. PLM BULK ANALYSIS, PERCENTAGE COMPOSITION BY VOLUME

RES 60177-1

Client Project: Date Samples Received: RES Job Number: Analysis Type: Turnaround: Client:

RES out 77-1
Kaiser-Hill Company, LLC
9977560, On-Site Sample Analysis, A. Gonzalez
9977560, On-Site Sample Analysis, A. Gonzalez
May 20, 1999
May 20, 1999
May 20, 1999
AHERA compliance. Composite results only apply for specific exceptions.

Client	Lab (O	، نـــا	hysical	Portion	Portion ASBESTOS CONTENT	nc _N	Asp	Non-Asbestos Fibrous	Fibr	sno		Nan-F	Non-Fibrous
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					Estimate	ر	S	⊢	œ.		Ų		
					( <del>*</del> )		S	T.			_	nc'	
662-99051305-09	EM 407111	A 00	A Tan fibrous material w/white paint B White plaster	20	O Z	80	00	00	00	00	00		20
							,	<b>&gt;</b>	, ,	,	,		2
ND = None Detected	CELL = Cellulosa ORG = Organic	ORG = (	Organic	WOLL = Wollastonite	Vollastonite GYP = Gypsum	mnsd						*	
TR = Trace, < 1% Visual Estimate	al Estimate	Trem-Ac	Trem-Act = Tremolite-Actinolite	BRUC = Brucite	rucite SYNTH = Synthetic	Synthati	.,					Tra OA	A



# RESERVOIRS ENVIRONMENTAL SERVICES, INC. NVLAP Accredited Laboratory #1896

TABLE I. PLM BULK ANALYSIS, PERCENTAGE COMPOSITION BY VOLUME

RES 60415-1 Kaiser-Hill Company, LLC 99Z7769, On-Site Sample Analysis, A. Gonzalez May 27, 1999 PLM Short Report, Bulk 24 Hour Client Project: Date Samples Received: Analysis Type: RES Job Number: Client:

Non-Fibrous Note: The US EPA requires use of stratified analysis for NESHAP and AHERA compliance. Composite results only apply for specific exceptions. STATES IT NON ASPESTOS FIBROUS [urnaround:

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709-99052405-03	EM 409632			, ,	Chysotile	10	0	0	0	•	0	0	06
		<u>~</u>		, Q	Amosite	E Q	0	85 (	0	0	0	٥	15
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709-99052405-04	EM 409633	⋖		7 0		Z	0	158	0	0	0	0	15
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709-99052405-05	EM 409634		A White fibrous woven material w/silvr	_		<u>.</u>					<i>و</i>	(	60
			White fibrous plaster	38	Chrysotile	7. 5. T.	0	35	) D	) >		>	
			C Gold fibrous material	55		Q.	0	82	0	0	0	0 `	15
NOTA Note Detected	CELL = Cellulose ORG = Organic	- Se Oi		N = 100	onite	GYP = Gypsum SYNTH = Synthetic	Svnth	1	Analyst: PDL	: PDL			The state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the s
TR = Trace, < 1% Visual Estimate	ual Estimate	ت	molite-Actinolite	BRUC = E	= brucite								_



Page 3 of 3

# RESERVOIRS ENVIRONMENTAL SERVICES, INC.

NVLAP Accredited Laboratory #1896

TABLE 1. PLM BULK ANALYSIS, PERCENTAGE COMPOSITION BY VOLUME

RES Job Number: Client:

Client Project: Date Samples Received:

Analysis Type: Turnaround:

Kaiser-Hill Company, LLC 9928273, On Site Sample Analysis, Andre Gonzalez June 24, 1999 PLM Short Report, Bulk 24 Hour RES 61274-1

AHERA compliance. Composite results only apply for specific exceptions. Note: The US EPA requires use of stratified analysis for NESHAP and

Cliant	Cl ab 1D	Physical	Portion A	Portion   ASBESTOS CONTENT	Non	Asbe	Non-Asbestos Fibrous	Fibro	SD		Non-Fibrous
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904-99061705-01	EM 417879	A Black tar	100	QN	Q	0	0 0 0 0	0	0	0	100
904-99061705-02	EM 417880	A Black tar	100	Q	٥	0	0	0 0	0	0	100
904-99061705-03	EM 417881	A Black tar	100	QN.	0	0	0	0	0	0	100
904-99061705-04	EM 417882	A Black tar	100	QN	0	0	0	0 0	0	0	100
ND = None Detected	CELL = Cellulose	ORG = Organic	WOLL = Wollastonite	lastonite GYP = Gypsum	msd	A	Analyst: PDL	PD			1/1/-
TR = Trace, < 1% Visual Estimate	stimate	Tram-Act = Tremolite-Actinolite	BRUC = Brucite	cite SYNTH = Synthetic	Syntheti	o					Dagoo

# Appendix G.2.4

**RLC Asbestos Characterization Report** 

Bldg. 551, 662, 709, 910, and 904 Pad

**Asbestos Inspection Report** 

# **ASBESTOS INSPECTION REPORT**

BUILDING 709 BUILDING 662 BUILDING 551 BUILDING 910 904 PAD Tents

**JUNE 30, 1999** 

Prepared for:

Rocky Mountain Remediation Services, L.L.C.

Prepared by:

FOOTHILLS ENVIRONMENTAL, INC.

2801 Youngfield Street, Suite 300 Golden, CO 80401 (303) 275-3470



### 1. EXECUTIVE SUMMARY

Asbestos assessment surveys were conducted by Foothills Environmental, Inc. at the Rocky Flats Environmental Technology Site (RFETS) west of Denver, CO. The surveys were performed for Rocky Mountain Remediation Services (RMRS) during the months of April and May 1999. The intent of the surveys was to sample suspect asbestos containing materials (ACM) in specified locations of five different buildings/structures at the RFETS site. All samples were collected by Andre Gonzalez, a licensed Asbestos Inspector/Management Planner by the State of Colorado and the Environmental Protection Agency. A copy of the analytical results is provided in Appendix A for reference. Radiological survey maps are provided in Appendix B and depict sample locations.

The assessment surveys were performed in the following structures/buildings:

- · Building 551 Roof
- · Building 910 Roof
- · Building 662 Comprehensive survey
- · Building 709 Roof and associated pipe insulation
- · 904 Pad Black tar

## 2. SCOPE OF WORK

The scope of work for this assessment included the following:

- 1. Visual inspection of the specified areas to identify suspect ACM;
- 2. Collection of bulk samples of suspect materials in each specified area for analysis by Polarized Light Microscopy (PLM);
- 3. Describe sample results of all sampled materials,
- 4. Provide laboratory results from an accredited laboratory.

## 3. SAMPLING AND ANALYTICAL PROCEDURES

Suspect materials were identified based on a physical assessment of the target structures. Suspect building materials were grouped onto homogeneous areas based on their physical characteristics, color, texture, and application. Suspect materials were divided into one of three categories based on the following homogeneous area classification scheme recognized by regulatory agencies (e.g., EPA, Colorado Department of Public Health and Environment):

- 1. Thermal systems insulation (TSI); any type of pipe, boiler, tank or flue insulation.
- 2. Surfacing material: sprayed or troweled onto a structural building member.
- 3. Miscellaneous: all other suspect materials, including flooring, ceiling tiles, floor coverings, other insulations, finishing materials, etc.

Random bulk samples were collected according to the guidelines published as the Environmental Protection Agency's Final Rule: Title II of the Toxic Substances Control Act (TSCA), 15 USC,



Sections 2641 through 2654 and in compliance with 40 CFR, Part 763 and the Colorado Department of Public Health and Environment (CDPHE) Regulation #8. At least three samples of each suspect material were collected for analysis by an NVLAP-accredited laboratory. Core samples collected were placed in sealable bags for delivery to Building 881 for analysis by Reservoirs Environmental Services. Samples collected were given unique identification numbers assigned by the accredited Asbestos Inspector for tracking purposes. For the purposes of this report, Foothills Environmental has considered a material to be asbestos containing if any one of the samples in a sample set (i.e., homogeneous area sample sets) collected were found to contain greater than or equal to 1% asbestos.

All bulk samples collected were analyzed by Reservoirs Environmental utilizing the Environmental Protection Agency's <u>Interim Method for the Detection of Asbestos in Bulk Insulation Samples</u> (EPA 600/M4-82020, December 1982) and the McCrone Research Institute's <u>The Asbestos Particle Atlas</u> as method references. Reservoirs Environmental Inc. is accredited by NVLAP (#1896) and participates in the NVLAP and AIHA Bulk Asbestos Sample Quality Assurance Programs.

### 4. SURVEY RESULTS

## **4.1 Building** 709

Building 709 is a cooling tower constructed primarily of wood. Fiberglass boarding was also used for specific components, but the majority of the structure is composed of wood. No suspect ACM was present on the Building 709 structure. Adjacent to the structure are several large insulated water lines and a pump station with insulated pipelines. Samples were collected from the insulation on the pipelines. Analytical results are as follows:

Sample Number	Material Sampled & Location	Analytical Results
709-99-05-24-05-01	TSI: Brown painted large water line on North side of B709	10% Chrysotile in brown resinous layer; None detected in other layers
709-99-05-24-05-02	TSI: 2" line exiting electrical shack on West end of B709	None Detected
709-99-05-24-05-03	TSI: Large water line on West end of B709	10% Chrysotile and a trace Amosite asbestos in brown resinous layer; None detected in other layers
709-99-05-24-05-04	TSI: 2" line from a pump generator into ground on West end of B709	None Detected
709-99-05-24-05-05	TSI: 2" line from a generator into a water basin on West end of B709	10% Chrysotile and a trace Amosite asbestos in the white fibrous plaster; None detected in other layers

All lines were wrapped in protective metal shrouds which made it difficult to differentiate homogeneous materials. For the purpose of this assessment, all materials were considered one homogeneous material. Three of the five samples had positive detections for asbestos. Based on the results, all thermal systems insulation (TSI) should be considered asbestos containing.



## **4.2 Building 910**

The roof of Building 910 was sampled for asbestos containing materials. Three core samples were collected. The results are as follows:

Sample Number	Material Sampled & Location	Analytical Results
910-99-04-27-05-01	Roof Material: East end - Center	None Detected
910-99-04-27-05-02	Roof Material: Center of roof	None Detected
910-99-04-27-05-03	Roof Material: West end - Center	None Detected

The roof is flat with a slight pitch and is composed of an underlying base board covered by tar and gravel. No flashing material exists on the roof. Each layer was analyzed for asbestos content with no asbestos detected in any of the samples. The analytical results indicate the roofing material may be considered asbestos free.

## **4.3** Building **551**

The roof of Building 551 is flat with drainage ports along the perimeter of the roof. The roof perimeter is built up approximately two feet with flashing along the entire length. Flashing is also present around all roof ventilation components, access hatches, and other roof structures. The roof is composed of an underlying base board covered by tar and gravel. Four samples of the roof system were collected and three samples of the flashing were collected. Analytical results are as follows:

Sample Number	Material Sampled & Location	Analytical Results
551-99-04-27-05-01	Core roof sample adjacent to access ladder on east side of roof	10% Chrysotile in the black tar layer
551-99-04-27-05-02	North end of roof - Center, 4 feet from east exhaust vent	None Detected
551-99-04-27-05-03	Southwest roof section; 6 feet from water drain	None Detected
551-99-04-27-05-04	South end of roof - Center; 8 feet east of round exhaust	None Detected
551-99-04-27-05-05	Roof flashing; northeast sky hatch	10% Chrysotile in black tar (painted silver)
551-99-04-27-05-06	Roof flashing; northwest section - second sky hatch from the north	10% Chrysotile in black tar (painted silver)
551-99-04-27-05-07	Roof flashing; northeast section - second sky hatch from the north	25% Chrysotile in black tar (painted silver)

Of the four roof samples one was positive for asbestos. Asbestos inspection rules require the roof be considered asbestos containing despite no asbestos detection in three of the four samples. All three of the roof flashing samples detected asbestos and must be considered asbestos containing.



## **4.4 Building 662**

Building 662 is steel structure built on a concrete slab with sheet metal siding and metal roof panels. Three suspect asbestos containing materials were identified within the interior – floor tile, ceiling tile and drywall. The drywall did not have tape or joint compound on any seams and therefore was not sampled. Insulation was not present on any of the water lines or the heating system. Analytical results are as follows:

Sample Number	Material Sampled & Location	Analytical Results
662-99-05-13-05-01	1' x 1' floor tile with yellow mastic; Floor entering locker room	None Detected
662-99-05-13-05-02	1' x 1' floor tile (mastic not present on sample); Near south door	None Detected
662-99-05-13-05-03	1' x 1' floor tile with yellow mastic; Floor drain outside bathroom	None Detected
662-99-05-13-05-04	2' x 4' white ceiling tile; North end of central office	None Detected
662-99-05-13-05-05	2' x 4' white ceiling tile; Northeast end of central office	None Detected
662-99-05-13-05-06	2' x 4' white ceiling tile; Center of central office	None Detected
662-99-05-13-05-07	Drywali	None Detected
662-99-05-13-05-08	Drywall	None Detected
662-99-05-13-05-09	Drywaii	None Detected

No asbestos was detected in any of the samples collected from suspect materials in Building 662. Building 662 may be considered asbestos free, based on the analytical results of the samples collected.

### 4.5 904 Pad

The 904 Pad consists of several fabricated tents consisting of metal frames with a high density covers. The tents are resting on an asphalt pad with black tar along the perimeters. The black tar acts as a caulking material between the tent and the asphalt pad and is considered part of the tent. The tent construction materials did not contain any suspect asbestos containing materials with the exception of the black tar. Fiberglass insulation was observed on some of the pipe, but it was clearly identified as fiberglass and was not sampled. Analytical results are as follows:

Sample Number	Material Sampled & Location	Analytical Results
904-99-06-17-05-01	904 Pad – Tent 8 – Northwest Corner	None Detected
904-99-06-17-05-02	904 Pad - Tent 9 - Northwest Corner	None Detected
904-99-06-17-05-03	904 Pad - Tent 10 - Northwest Corner	None Detected
904-99-06-17-05-04	904 Pad – Tent 11 – Northwest Corner	None Detected



Wojtaszek, Paul

From: Gonzalez, Andre

Sent: Thursday, July 22, 1999 10:40 AM

To: Wojtaszek, Paul

Subject: 904 pad

Paul,

Asphaltic tar samples were collected around tents 8, 9, 10, &11 at the 904 Pad. The asphaltic tar around tent 7 was not sampled because it is considered the same homogeneous material as around the other tents. For this reason, the asbestos results reported should include tent 7. If you have any questions, please do not hesitate to call me.

Thanks,

Andre

524/524